CHAPTER SIX
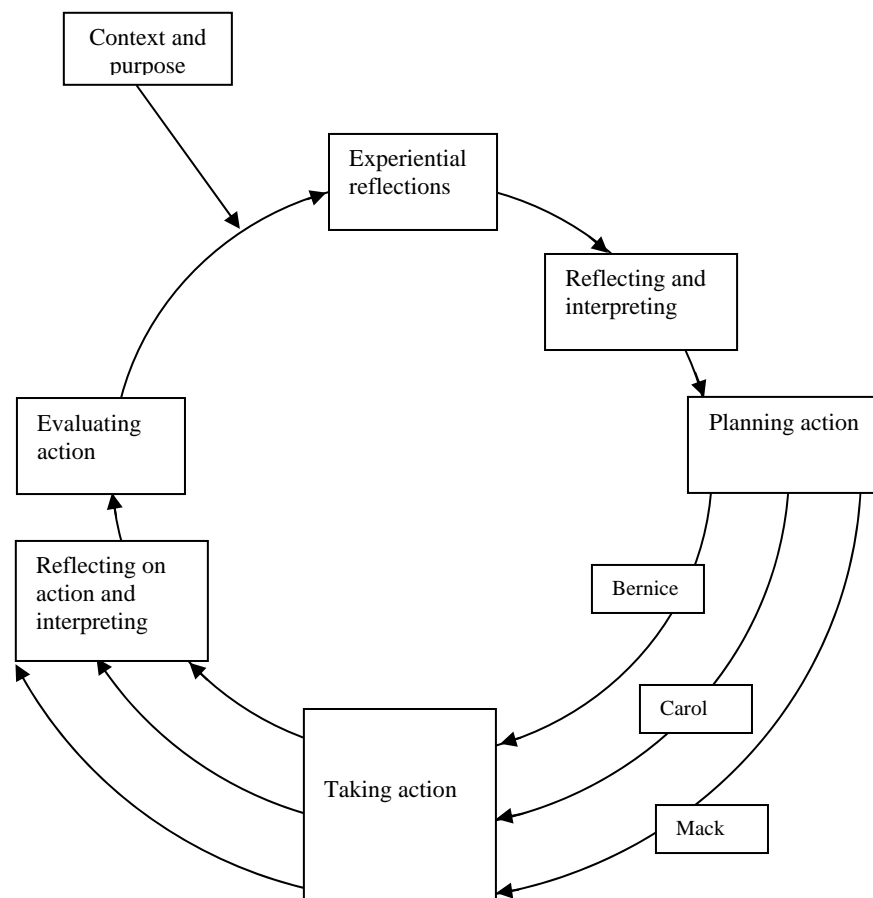
CASE STUDY PARTICIPATORY ACTION RESEARCH CYCLE THREE

6.1.   Introduction

The purpose of this chapter if three fold: first it hopes to present the sequence of this cycle in relation to the other three cycles, observed in Table 8 (see shaded area). Second it presents the case study participatory action research cycle model used as observed in Figure 3. Finally it describes the data analysis process and presents the analysed second level data in the form of themes for each of the steps in the cycle and conclusions are reached.

Table 8: Sequence of cycles

Action research cycle one	Action Research cycle two	Action Research cycle three	Action Research cycle four
Weeks one, two and three	Weeks four, five and six	Weeks seven to seventeen	Weeks eighteen to thirty-nine

Figure 3: James model for cycles three and four

6.2. Context and purpose

6.2.1. Context

The contexts for this cycle were the school to which each student teacher was assigned, on the one hand, and the university site on the other. The research participants in this cycle were the student teachers, the specialisation lecturer, the mentor teacher, the student teacher's peers, and the researcher herself.

6.2.2. Purpose of cycle three:

The purpose of this cycle was for two dimensions. The first concerned with establishing the student teacher's practice theory regarding their *preparation* to facilitate learning in practice and the second was to challenge the student's practice theory regarding their

facilitating learning in practice during an extended (8 week) school based learning period. In terms of the first purpose, the initial strategy for its fulfillment involved the utilization of student teachers' practice theory as assessment tool for observing mentor teachers teaching and themselves tutoring learners at a placement school. This exercise involved reflecting on and sharing their experiences. Another strategy involved establishing their constructed meaning of a practice theory through the teacher educator asking the corresponding appropriate question. A further strategy involved establishing the student teacher's perception of the relationship between a practice theory and designing learning tasks by the teacher educator asking the corresponding question. The answers to the questions were also explored for better understanding of their practice theory construction.

To achieve the second purpose, student teachers had to design learning tasks and operate these learning tasks. These Learning tasks then had to be assessed by the students, their peers, the mentor teacher, the specialization lecturer, and the researcher. The student teachers were then expected to reflect on and share their experiences regarding the above

6.3.   Step 1: Experiential reflections

Descriptive data was developed from the categories concerned with Bernice, Carol and Mack's experiences of tutoring the learners at the placement school, their observation of the mentor teacher teaching, their meaning of practice theory, and their constructed phronesis about designing learning tasks. A detailed report of the data collection process, the data analysis process and the descriptive data is presented in appendix 1, section II – cycle three in the DVD). The analysis process of the descriptive data and the emergent themes are presented in 6.3.1. and 6.3.2. respectively.

6.3.1. Data analysis

The descriptive data was read and then emergent themes were developed from the relationships between the categories.

6.3.2. Themes

6.3.2.1 Teacher action critique generated ideas for effective practice

Student teachers were given opportunities to "explore and appropriate the meanings of the interactions and roles that they participated in" Van Huizen *et al* (2005, p. 279) to facilitate the construction of meaning of their practice theory. Bernice's assessment of the teacher was that she (the teacher) was "just feeding the learners with stuff". Bernice was at this stage aware that the learners had to construct knowledge for themselves and that this teaching method was not developing learners. This is why she wanted "to give the learners some interesting things to do not just the transparencies" that the teacher expected her to put on the OHP for the learners to copy. Mack had observed that his teacher made use of group work where there were homogenous groupings with "groups of all boys, all girls, all Blacks, all whites". Even though the teacher shared the reason for this grouping, all learners "live in different areas and when they are given a project then it is difficult for them to meet to complete the project", Mack felt uncomfortable with this grouping. He decided that he would do it differently and he planned a strategy to give learners time at school to work together. Carol was based at a dual medium school where she observing her mentor teacher teaching in Afrikaans and English. Carol observed that the teacher mentor wasted a lot of time talking in the different languages. Even though Carol is Afrikaans speaking she decided that when she is facilitating learning she would "speak in English only and I will get the learners to work it (Afrikaans) out" This is because much of the time was wasted in class owing to the use of different languages.

6.3.2.2. Trialing, personality and reward

Bernice's constructed meaning of practice theory was "you need to be in the situation and try different things until you found something that really works." She further illustrated her meaning by stating "the Bushmen were not told to sit and then the instructions on how to go hunting was told to them. They had to learn how to hunt through experience. Mack viewed practice theory as people trying "things differently". He also thought that practice theory was concerned with what the student teachers had learnt during the discussion sessions (the theory) and "how you put it into practice." Carol viewed practice theory as linked to who the person is and "what you would like to happen." As she did not want learners to do badly, she suggested that she would "reward them" if they experienced the activity.

6.3.2.3. Learner enjoyment, learning and relevance

Bernice's choice of activities in the learning task was influenced by her beliefs that if learners "enjoyed it [an activity] then they would learn more, if the learners were interested then the learning task would have meaning for them and if it (the learning task) is relevant then they will enjoy it". Carol also believed that learners had to experience "enjoyment and learning", different types of activities and the learners' views of learning must be considered. She supported this perception of enjoyment and learning with her own experience when she said, "if I enjoyed an activity I will learn more and I will remember more and I will remember less if something is boring." Carol believed that the expectation of "substantial justification from learners is what made a learning task different and challenging." Mack also believed that learner enjoyment and learning was important in that "enjoyment makes a person want to learn as it is an intrinsic thing." His thinking was that "learning becomes intrinsic automatically because if they [the learners] are enjoying

it, it [the learning] comes by itself" and that "the learners' enjoyment during the process of learning lay in what they achieved at the end by learning."

Bernice believed that when designing practicals for learning tasks she had to consider the preparation of specimens, how to conduct the practical, "how to dissect the heart" and to "record what she did because if something went wrong I will be able to re-do what I did".

Mack's understanding of constructing a learning task was that there are questions that need to be focused on like "what are you trying to achieve in the activity, are the activities in the learning task relevant and enjoyable?" Mack was aware that when he gave the learners an experiment linked to the learning tasks he would have to ask them to "describe the process that they used and to substantiate their findings."

6.4.   Step 2. Reflecting and interpreting

The descriptive data described the role of the specialisation lecturer in the discussion group sessions, each student teacher's understanding of the case study participatory action research process, the student teachers' participation in the discussion sessions, feelings and understanding about his/her construction of learning task knowledge, reflections of their school-based experience, practice with reflecting and their understanding of phronesis/practice theory was read. A detailed report of the data collection process, the data analysis process and the descriptive data is presented in appendix 1, section II – cycle three in the DVD). The analysis process of the descriptive data and the emergent themes are presented in 6.4.1. and 6.4.2. respectively.

6.4.1. Data analysis

The descriptive data was read and then emergent themes were developed from the relationships between the categories.

6.4.2. Themes

6.4.2.1. Challenged, supported and facilitated

The role of the specialisation lecturer (teacher educator) in the discussion-group sessions was critical and constructive for the student teachers to elicit and challenge their beliefs about the role of a facilitator of learning and the understanding of their facilitation of learning practice. The importance of this role of guided support for trainee teachers to develop a professional identity "as embedded in the sociocultural practice" (van Huizen, *et al,* 2005, p. 281) by the specialist lecturer during the specialisation discussion sessions is evident in the following: he initiated *the discussion, prompted the students to participate* in the discussion by stating, "you have come from the schools, are there any things that you want to share and any questions that you want to ask?" He also challenged and supported the student teachers to think about their own beliefs about how they would facilitate learning – "it is good that you can … ask the questions like the one that you asked, this is what this teacher is doing but what will I do?" He also used the experiences that the student teachers shared during the specialisation discussion session to facilitate the student teachers' construction of further knowledge about facilitating learning (Brown, Collins & Duguid, 1989). During the session he did not provide the student teachers with answers instead he got them to question their own responses further. He then used these responses to discuss guidelines for facilitating learning and he also integrated education theory to further challenge the student teachers on their construction of their practice theory. He also elicited the student teachers' feelings of sharing their ideas (Hargreaves, 1998) in the group setting. These experiences that the student teachers participated in were important

for their construction of their practice theory and they were expected to construct and co-construct (Von Glaserfeld, 1995) ideas and actions for facilitating learning.

6.4.2.2. Anyone could pitch in

Each student teacher's participation was evident from what Bernice said "anyone could pitch in". Each student teacher participated openly and freely and shared his/her experiences and opinions. They were provided with discursive spaces for them to share their experiences in a safe, constructive manner. These participation actions were oriented towards the leaning and development of the student teacher as reflected in Van Huizen *et al*'s (2005) theory. In this instance these spaces were structured sessions, which were conducted at regular, ongoing periods at the university site.

6.4.2.3. Feelings and possible actions

Bernice, Carol and Mack's reflections indicated the feelings that they had experienced and the reasons for these. Bernice experienced "fun" and she "felt good". The reasons for these feelings were that she was responsible for the class as her mentor teacher was not in the classroom and the learners gave her positive feedback about the way she explained and that they enjoyed the class. Carol expressed mixed feelings about the experience. She felt fear and boredom while sitting in the classroom observing the teacher. The feeling of fear was attributed to her observation the learners' behaviour in that they "did not listen to her [the mentor teacher] it was chaos in her class most of the time", "the classes that I was to take are the two most difficult classes". Even though Carol was expected to observe and record her observations, her feeling of boredom stemmed from the fact that the teacher did very little with the learners. Carol wanted at that time to get up and facilitate learning as her perception of learners and learning was that there had to be "enjoyment and learning" (see descriptive data cycle 3, step 1) and she was not observing this. Mack stated that he

had **"enjoyed my time at the school – it was lekker[1]."** But he also experienced boredom as "I was just sitting and observing." Mack, furthermore, did not feel challenged by the action of recording observations during this week. Although he did value sitting behind a desk and observing, his urge to facilitate learning was very strong and he wanted to be the person facilitating learning.

Each student teacher used the observations to make decisions about the role that they would play as facilitators of learning in the particular classrooms that they were to be based in. Bernice described her role as "explaining the stuff to them (the learners)". Carol's reflection indicated her role of how she was going to manage the learner discipline when she stated that "I think that they (the learners) are not that bad it is just that she (the teacher) does not handle them very well. I will be the opposite. I will be very strict."

6.4.2.4. Constructing and assessing a meaning for practice theory

Carol understood practice theory in terms of her own practice theory which she saw as a "kind of just theory at this point". Mack stated that practice theory meant **"forming your theory from your practice".** He understood that "through your experience in the classroom you are able to build on your theory". Bernice's understanding was that "the only way you can get something like practical wisdom is by experience." She thought that when some lecturers tell you "this happened to me that is worth more than plain theory." She said that she could then relate these happenings to her own experiences and "think yah I saw that." Bernice was assigning meaning on a personal level for the construction of practice theory. This phenomenon is described in the literature by Van Huizen *et al* (2005). Mack also understood practice theory as what you know "about yourself and how you interact with other people." This indicates the importance of a student teacher's personality in the

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[1] Lekker is an Afrikaans word that means nice.

construction of meaning involving valuation where meaning was integrated into the personality (Van Huizen *et al*, 2005).

6.4.2.5. Learning and feelings from operating a learning task

The student teachers' reflections of their action of initiating learning of their learning tasks indicated the learning and the feelings that they had experienced during the process. This experience of initiating learning was important for the student teachers to assess their competence of facilitating learning and to make decisions about what they needed to focus on for improvement. It was during this time that the student teachers could explore and construct the meanings of these interactions and roles (Van Huizen et al, 2005) and use these to make decisions about the development aspects that required attention and re-planning.

Bernice thought that it was **"**fun and I felt fine doing it" and that this experience led her to believe that "if I stood in front of a class I will not worry". She developed further knowledge and skills about how to design a learning task when she stated that "I had designed too many different things" for them to do and she realised that she had "confused the problem with the organisational aspects of what the learners need to do." Carol had developed the competence to assess her own presentation when she said "I do not think that mine or anyone else's presentation was gripping enough or stimulating." She was aware that she had given necessary organisational instructions to the learners about what "they needed to do about the activity". It was only after she had reflected on the problem that she had posed, did she realise that she had not planned for giving the children "enough information for them to understand how to go into action." Mack was aware of the changes that he needed to make to his presentation. He reflected on the problem that he had posed, and he stated that "it does not encompass everything … it is important that [it] has clarity."

He decided that he would have to work on formulating the problem and to "think further about it … [to] "make sure that the learners understand what I said."

6.4.2.6. Collegial support of practice

The student teachers' reflections about collegial support indicated the feelings that they experienced when sharing sections of their learning tasks during the discussion sessions. Even though Bernice, Carol and Mack stated that they **"**felt good" they expressed different reasons for this feeling. Bernice and Carol's reasons focused on their understanding of how to do it (facilitate learning). Bernice only appreciated the comments if they "made sense" to her and she could "see herself doing it". Carol only appreciated the comments when "she could see that she would be able to do that (whatever was suggested)". Mack's reason was to "see how other people think."

Step 3: Planning action, step 4: Taking action and step 5: Reflecting on action and interpreting

Step 3, 4 and 5 for each of the student teachers are presented in this section. Steps 3 was concerned with the student teachers planning (designing) their learning tasks and their professional portfolio. The descriptive data collected focused on the how the student teachers planned (designed) their learning tasks and also on how they designed their professional portfolio and planned for their portfolio defense. Step 4 was concerned with the student teachers taking action in terms of operating learning tasks from week eleven to seventeen (seven weeks). During this time, the student teachers participated in specialisation sessions at the university. They also presented their professional development portfolios during week thirty nine of the programme. The descriptive data collected for step 4 focused on the operation and assessment of the student teachers' learning tasks, the nature and content of the specialisation session, and the nature and

content of the professional portfolio and the portfolio defense. Essentially, descriptive data collected during the specialisation sessions focused on the student teachers' observations, assessments and suggestions made on how to improve the recorded learning tasks operated by Bernice and Mack. Step 5 was concerned with the student teachers' reflections on the taking actions step. The descriptive data collected focused on the student teachers' construction of a meaning for practice theory and the role of a facilitator of learning, construction and use of the theory of facilitating learning practice, the contribution of the mentor teacher towards the student teachers' construction of practice theory and the contribution of the specialisation programme towards the student teachers' construction of practice theory?

A detailed report of the data collection process, the data analysis process and the descriptive data for each of the steps 3, 4 and 5 are presented in appendix 1, section II – cycle three in the DVD. The descriptive data was further analysed for emergent themes. The themes are presented in 6.4. for Bernice, 6.5 for Carol and 6.6 for Mack over the next few pages:

6.5.   Bernice

6.5.1. Planning action

6.5.1.1. Relevance, interest and challenge for learners informed the designing of the learning task

Bernice understood that in designing a problem she had to consider the relevance and interest of it to learners and the authentic nature of it, in that it could in her words be "something that could really happen". It was for this reason that she used a problem that

was linked to a learner's uncle who has a blood circulation disease. She justified her choice of problem as "the use of this context made it more of a real life problem." Bernice stated that a problem that she experienced was with "how to get them (the learners) started properly." According to her the challenge therefore was for her to "design something that would get them" started quickly.

6.5.2. Taking action

6.5.2.1. Operating a learning task entailed knowledge of approaches, action and development of features

Bernice had incorporated both substantive and syntactical aspects of facilitating learning in operating her learning tasks. She was aware of the importance for her to use particular approaches to facilitate learning effectively e.g. her method of grouping was based on her rationale that the use of heterogeneous grouping in class was effective for facilitating learning. It was evident from the type of problem that Bernice presented to the learners in the second learning task that she understood and could implement a relevant real-life problem that was interesting for learners. She was competent now in incorporating and managing the co-operative learning aspects and the use of resources efficiently. Bernice initially developed and implemented a learning task that had the basic requirements. From her experience of designing and implementing learning tasks Bernice now focused on refining the finer details or aspects of the learning task e.g. the structure and type of real-life problem, her management of time and resources. This sequential development could be regarded as levels of difficulty linked to practice. With greater practice, higher levels of difficulty could be achieved.

6.5.2.2. Assessment of the learning task for self-awareness and constructive support

Bernice as a result of operating and assessing her own learning task became aware of her strong points and weak points of operating a learning task. She used this information to identify how she could develop in terms of providing greater attention with problem clarification, more interesting learner activities for the learners to have greater involvement, her time management was "inefficient" as it allowed for distraction so it needed to be efficient and more-focused and she needed to get learners to work out solutions themselves. Bernice had developed in operating her learning tasks with respect to learner involvement as the "total group of learners were involved, highly interested, motivated, took responsibility for their own learning".

Assessment of the learning task by different assessors is essential for constructive development in that the assessors provided constructive support. This support comprised of suggestions to improve the operation of the learning task and also comments about the student teacher's strong and weak points in operating the learning task. Comments like you are "enthusiastic and you have a good interaction with the learners" could serve to motivate Bernice.

6.5.3. Reflecting on action and interpreting

The reflections that Bernice shared on a social and personal level were essential for her construction of her practice theory. In reflecting Bernice had to elicit her beliefs, thoughts, perceptions and feelings about being a facilitator of learning and her experience of facilitating learning in her professional portfolio and during the specialisation discussion sessions.

6.5.3.1. A facilitator of learning should focus on use of their personality and learner actions

Bernice was aware that her role in this context, where learners were used to being fed (see cycle 3, step 1 – 6.2.1) had to be one where she was taking them out of "their usual way of getting notes." She described her role as "I am not giving them notes, I just ask questions." Bernice was not transferring information to the learners; instead she was challenging them to think. As a result of the role that she played and the role that she expected of the learners, they according to her "are becoming to realise that I will not give them any answers and that they have to think," and they in her words were "now able to explain things on their own." Bernice stated that she wanted to be "relaxed and herself with the learners [and she wanted to] … laugh with them." She concluded from observing many teachers teaching that they "are totally stuck up and boring". She could not understand why teachers in her words "did not have an open experience" with the learners. For Bernice a teacher's personality was important and the teacher should share this with the learners by being themselves. Because Bernice wanted to prove that she could work with the learners (see cycle 1, step 5 in the descriptive data) she purposively chose to work with "the two naughtiest classes" and she evaluated her role as "I got more out of them (the learners) than the other teachers." This belief of the importance of personality is evident in the literature where according to Van Huizen *et al* (2005, p. 273) it is "an integrative system".

6.5.3.2. Learning from practice, assessment, reflections and feelings

Bernice stated that she had learnt from the operation, assessment and reflections of her first learning task operation and from various aspects that she had experienced. She provided the following as evidence of her learning "with the second learning task I made a big difference. I did research and I checked the stuff before I started." She also stated that

she "now checked the learners' work when they were doing co-operative learning to make sure that they are on the right track." This development of personal meanings through being engaged in social practices is one of the principles of learning and development in the literature by Van Huizen et al (2005).

Initially, Bernice felt worried that she was not going to feel as excited with facilitating learning for seven weeks, "as she felt when she spent the week (one week) at the school". These feelings changed due to the learners' positive response to the learning task operation in that "they (the learners) are quite excited … and now I am excited again." Some feelings served as highlights for Bernice in that she was surprised by the learners' performance during the operation of the learning task as they "were so good" and "they come with interesting stuff that I did not make provision for". Bernice had also experienced feelings linked to her self –enjoyment when she stated that she "had fun and I enjoyed it." Bernice's feelings were internally and externally motivated.

6.5.3.3. The type of contribution and support

Bernice thought that the mentor teacher made a huge contribution to her construction of her practice theory. She stated that the mentor teacher supported her in that she "answers every little question," and helps with the "planning of learning tasks". Bernice thought that since the mentor teacher "knows what the university expects" she was very helpful.

6.5.3.4. Sharing and discussing authentic experiences, administration stuff and quality

Bernice viewed the sharing and discussion of her peers' authentic experiences and the challenges that the specialist lecturer raised as very meaningful. Bernice stated that she had listened to Carol describing the trouble that she had, had in her class and to the advice that was given by Professor Ned when he stated that "if you do not get co- operation, do not

work" and she used this to operate her own learning task. She stated that she also used the experiences from the peer teaching on campus (cycle 2, step 2). Bernice concluded that "she did get help for Professor Ned" in that "he mainly helped with administration stuff not really with content and context stuff". She stated this because she expected to learn and be told about how to teach learners, she expected Professor Ned to tell her all this. Bernice stated that it contributed to her being able to "assess the quality of maintaining learning by looking at whether the learners are active; their discipline is managed and if she could organise them into groups."

6.6. Carol

6.6.1. Planning action

6.6.1.1. Feelings of stress and pressure and learners' bafflement informed the designing of the learning tasks

Carol's learning tasks had the required features as depicted in the module documents for the Life Sciences PGCE student teacher. Carols experience of designing the learning task is linked to feelings that she experienced. Since this was the first learning task to be operated in a classroom that Carol has designed, and she had experienced so many different emotions during the period, she said that it was "hard to describe how I felt when I was busy preparing" it. She did eventually state that she had experienced "so much pressure and stress … [and she was] unsure" about how to design the learning task. These mixed emotions and thoughts that she experienced, indicated the intensity of this first experience for her. Furthermore, since she is an L1 and L2 trainer/teacher who in her words "like[s] to plan and organize to make sure everything happens according to schedule" (see cycle 4, step 4 - 4.5.3.), this explains the intensity of her feelings if things

are not done properly. These reactions that Carol experienced can also be explained in terms of her self-image where she does not have a fixed self-image and she is a type of person who is negative especially in frustrating situations (see cycle 1, step 4 - 4.5.3.). Carol was developing in her competence to plan learning tasks and she felt more relaxed about this. Towards the end of the practicum session the learning tasks that Carol had planned, had a relevant and challenging problem statement, the learners had to work with different levels of difficulty and a variety of activities to try to solve the problem. Carol was also aware while designing the learning task that the learners had never done learning tasks in their lives before and besides being "quite baffled with this new concept … [they were not used to] doing something". She experienced great discomfort with this knowledge as she understood that she would have to think about and plan for a learning task where learners were active and they were learning.

6.6.2.   Taking action

6.6.2.1. Self-challenging feelings, feelings linked to the learners' performance, beliefs, context and time

Carol felt intense emotions about operating a learning task as she was "uncertain about managing the learning task" and being the type of person she is "critical and negative especially in frustrating situations" (see cycle 1, step 4 - 4.5.3.), this resulted in her feeling great discomfort. It was during these critical moments before operating the learning task that Carol's "feelings and beliefs about the new paradigm were being challenged". This challenge happened at a time when her skeptical beliefs about this new paradigm was "soaring and I was sure that it would never work". But even though she felt uncomfortable and her beliefs were skeptical, and she is the type of trainer who could resist new teaching methods, she made a surprising comment that the "whole experience was not necessarily a negative experience, and I did grow from this." This could be due to the fact that Carol had

persevered in her action of planning and operating the learning tasks and she observed that she could achieve this. This phenomenon is reflected in the literature where Richardson (1996) asserts that there is a relationship between beliefs and actions, and that these are interactive in nature. It is then in performing the act that the student teachers will start changing their beliefs. Since Carol's vision of achievement as a facilitator of learning focused on good learner performance and she did not want learners to do badly, she expressed her feeling of operating the learning task in terms of learners' performance when she stated "learners were not excited at all" and "I expected more of them". A further example is evident in the excitement that she experienced when "two learner groups … found stuff that they did not need to know about, which was outside the curriculum". Carol's use of learner performance as an indicator of learning is reflected in the literature as an indicator of quality learning and teaching by Morrow (2007) and as an interplay between performance and meaning as asserted by Van Huizen *et al* (2005).

From operating the learning task, Carol realised that she needed to understand more Life Sciences content knowledge for her to be able to "challenge" the learners and "ask them questions". She was aware that she did not specialise in Life Sciences in her undergraduate years and therefore does not have knowledge of all the Life Sciences content areas planned for learners in the Life Sciences curriculum documents. Carol also realised that "time is a challenge" especially when working with particular teaching approaches e.g. learner group presentations.

6.6.2.2. Assessment of the learning task for self-awareness and constructive support
Carol as a result of operating and assessing her own learning task became aware of her strong points and weak points in operating a learning task. She used this information to identify how she could develop in terms of the following: clarity of problem, instructions,

meta-learning, time and learner management. She identified the specifics with regard to each aspect that she needed to improve: the problem posed as clear, but it "lacked relevance, challenge and urgency," the learner involvement was assessed as "at times a few shows an interest" and her time management as "allows distraction and the focus is on individual needs". She was aware that for her to improve she would have to develop her management skills in the class, to be stricter, to create a better learning environment and to get the learners to listen.

The assessment by Carol's peer, the mentor teacher and the researcher served to be constructive for her development and learning. Her peer only commented on strong points and she described the learning task as "outstanding [since] you had the attention of even the naughty children in the class and everyone participated" while the mentor teacher and the researcher indicated strong and weak points and also offered advice as evidence by "(t)he idea of the group presentations was excellent … You need to focus on managing the time and the dynamics of the group presentation (researcher assessment).

6.6.3. Step 5: Reflecting on action and interpreting

The reflections that Carol shared on a social and personal level were essential for her construction of her practice theory. In reflecting Carol had to elicit her beliefs, thoughts, perceptions and feelings about being a facilitator of learning and her experience of facilitating learning in her professional portfolio and during the specialisation discussion sessions.

6.6.3.1. Critical incident, practice, experience and vision informed the meaning of the role of a facilitator of learning

Carol constructed her understanding of the role of a facilitator of learning from a critical incident (the conflict she experienced with a learner in her class) and from facilitating learning through the execution of learning tasks herself, her own experience of being taught and her vision for a facilitator of learning. The conflict situation that Carol had experienced with a learner, challenged her to think and act differently when she said "I showed the learners that I am serious about 'teaching' and discipline in our classes and that I was not going to back down." As a result of this situation she stated that even though "I was very shocked with this situation [conflict] …I know that next time I am equipped to handle it the right way." She felt that she "grew in confidence … I feel more self-assured in handling difficult situations." The importance of the development of the professional identity as "embedded in the sociocultural practice in which she was a participant" (Van Huizen *et a*l, 2005, p. 281-282) was evident in Carol's learning and development.

After facilitating her first learning experience Carol wrote, "this was the first really momentous moment in my development as a facilitator of learning. My first baby steps in the right direction." This indicated her growth. It was while facilitating learning at the school that Carol became aware that she wanted to be a mixture of the following: "to know my subject; the children to enjoy, and I do not want to be boring; for it to be fun, but not too much fun because it gets out of hand." She understood her role as "I have to set the tone in the classroom".

Her perception was also informed by her experiences as a learner at school where the teachers displayed varied personalities and effective teaching competence. She stated that "many teachers were horrible. My mathematics teacher was a real teacher; he explained

well but was horrible to children." Even though he was horrible she thought he was "the greatest math's teacher." Another great teacher "Afrikaans teacher was totally different - she was cool." Her Biology teacher was also great because "you could ask him anything and he knew everything but the class was so boring."

Carol's perception of a facilitator of learning was: "A fun, cool teacher who was not boring but set the tone, who did not teach all the time, who knew everything and explained well, and was a motivating force in the children's lives." This perception was essentially similar to what she stated in cycle 2, step 1 – 4.2. This facilitation of learning at the school extended and affirmed her perception (Kolb, 1984; Kagan, 1984, Leavy, 2007) of the role of a facilitator of learning.

6.6.3.2. Learning from practice, observing learners and personal experience.

Carol was aware that she had to make changes when operating a learning task. She was aware of what she needed to improve and she said "for my next school I will be stricter from the beginning rather than try to be relaxed." She also evaluated the use of group work when she said "I do not think group work, works." She had made this decision on the basis of observing the learners. She stated that learners "do not like it. Learners think: I do the work and I get this mark. Someone in my group does not do work and they get the same mark." Carol thought that co-operative learning had its uses but it had problems as the learners "do not like presentations and they do not listen to their classmates." She was aware of this from her own experience when she said that "at university I do not listen to my classmates when they are presenting".

6.6.3.3. Attitude to learners, practice and quality of impact of a mentor teacher

Carol was assigning meaning at a micro-level in the interactive situations (Van Huizen *et al*, 2005) where the meanings were implicit. Carol assessed the teacher mentor as a person who "really thinks about her children even though her discipline is not the best." When Carol observed the mentor teacher teaching, she questioned and challenged her own competence about what she did and what she was capable of in facilitating learning when she said "maybe I didn't research all the learners in my class and maybe they did not construct their own meaning about everything." Carol though did conclude that "I know for sure that the learners in my class achieved more than those that were sitting and listening in this (mentor teacher's) class. Carol stated that when she observed the mentor teacher teaching she "was very bored and stared at the information on the transparency that she (mentor teacher) was busy explaining." It was whilst experiencing this and observing the learners in the classroom that she "suddenly realized that there were maybe two learners in the class that were listening to the teacher in front". At this point she felt the internal need as described by Korthagen (2001) in the literature, for her to change. She stated that this was "the day that I had the AHA feeling for the first time." It was at this point that her beliefs about the new paradigm were moving to an acceptance level as she "realized that this new paradigm in education is not absurd as I thought." This move from a personal to a professional exploration was essential for Carol's self-realisation for the paradigmatic change in beliefs.

Carol stated that even though the mentor teacher "really does help with problems" in terms of resources etc. that Carol required for facilitating learning, she did not "expect that much" from the mentor teacher. She thought that the mentor teacher could "not influence my practice theory in a positive way". The reasons Carol gave for this were that the mentor teacher "teaches like a teacher, she stands and talks [and] … she teaches different

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from what we expect" and she "did not know what I did wrong, or how I could improve" when the mentor teacher assessed her learning experience. Carol stated that it seemed as if the mentor teacher did "not know anything about what we [student teachers] are doing." Carol then concluded that she did "not think her [mentor teacher's] practice theory and ours is similar."

6.6.3.4. Syllabus, advice and the content of the sessions

Carol stated that the specialisation session "did more like help with the syllabus (Life Sciences policy document) the stuff we did not know about." She also shared that the sessions impacted on how she facilitated learning in that when she "I explained to learners what they had to do, but I was also aware that Professor Ned had told us that we should not explain any theory to them, they must read the instructions and interpret them". Carol stated that what she experienced in the programme "was not what we expected at all, but it was not useless because we use some of it and it helps to develop overall." She evaluated the programme as "developed us as teachers and not as biology teachers". Carol stated this as she was not learning Biology content (what she expected to do). Carol evaluated two specialisation sessions - "the one on substantive and syntactical" and "the theory and practice one" as the ones that made a huge contribution: towards her construction of her practice theory.

6.7.   Mack

6.7.1. Planning action

6.7.1.1. Feelings of uncertainty and a lack of decent learning tasks

Mack's learning tasks had the required features as depicted in the module documents for the Life Sciences PGCE student teacher. Mack's experience of designing the learning task is linked to his feelings about the learning task. Mack felt nervous about the planning of a learning task as he did not know in his words "what exactly I am going to facilitate and how I am going to go about it", and also if it was "going to be effective." These feelings were increased by the fact that he had not planned all the required learning tasks for this practicum period. Furthermore, Mack was looking for lesson plans that he could use, instead of designing them, but he could not "find decent ones " and he had to now design them.

6.7.2. Taking action

6.7.2.1. Diverse feelings and a learner incident influenced the operation of a learning task

Mack expressed anxiety as "things went wrong" and he was "frustrated" because his organization of the learner activity "took so long", longer than planned for the session. Mack had tried taking risks by using new and different approaches e.g. "co-operative learning with the learners at the beginning of the practicum but he had "found it tricky." He attributed this feeling to "the uncertainty of a new experience". Mack also expressed feelings of enjoyment for operating the learning task. This feeling was due to the learners' responses in that they "seemed to be enthusiastic about what they were doing, they were not talking or bored, they were getting involved.

Mack was aware that he had to consider learners' needs while facilitating learning. This awareness was developed from a critical incidence that he had experienced with a learner who he had counselled (spoke to him about his work). This learner experienced "struggles with work" and after the counselling he was "keen to start." Mack's action was self-rewarded in an emotional way (Hargreaves, 1998) as he "felt nice talking to him." This action alluded to the larger action that Mack thought was essential when facilitating learning in that it was "important to get the learners to learn and be enthusiastic about learning".

6.7.2.2. Assessment of the learning task for self-awareness and constructive support

Mack as a result of operating and assessing his own learning task became aware of his strong points and weak points in operating a learning task. He used this information to identify how he could develop in terms of the following: co-operative learner, learner discipline. The assessment of the learning task by different assessors was essential for constructive development in that the assessors provided constructive support. Mack's peer, the specialist lecturer and the researcher also identified strong and weak points of the learning task operation and made many suggestions.

6.7.3.   Step 5: Reflecting on action and interpreting

The reflections that Mack shared on a social and personal level were essential for his construction of his practice theory. In reflecting Mack had to elicit his beliefs, thoughts, perceptions and feelings about being a facilitator of learning and his experience of facilitating learning in his professional portfolio and during the specialisation discussion sessions.

6.7.3.1. Emotional and identity formation

Mack experienced mixed emotions when he said "I am enjoying it. I am stressed at the moment … I am a bit worried". Mack had these mixed feelings due to the time demands that he felt as a facilitator of learning when he said "I do not know if I will get everything done" [work programme for the term]. Mack also experienced feelings of amazement of himself - facilitating learning when he said "I never knew that I could be like this – facilitating learning." Mack also perceived his role as a facilitator of learning in a professional developmental one when he said "it was enjoyable … the fact that you see yourself going somewhere, you see that you are developing."

6.7.3.2. Learning from practice, learner aspects and facilitator of learning positioning

When Mack implemented teaching approaches he used his understanding of the effects of these for quality learning for learners. The evidence of this was when he used group presentations and he let the groups decide how they were to present their project reports. The reason that he gave for this was that he wanted the learners to be "creative in their presentation" [as] … too many guidelines would have limited them." He became aware, after observing the learner groups working, of what he could have done to make the facilitation of learning more effective. He stated that he "could have given definite guidelines for the brainstorming. This would have been more helpful and constructive for the learners." He was aware that when working with groups this is "where the whole meta-learning comes in, where you work first with the individual – once they have established what they know and have something, then you work with the group". Mack was aware that learners are constructors of meaning when he said "[the learners] construct the best understanding of the topic by putting ideas together, using the resources that they have." Mack also developed an awareness of the importance of his spatial position in the classroom in relation to that of the learners. This is indicated by in his words, "I noticed

that when you stand in a spot, half the class is not focused or is going wild [and] … I have a tendency to stand next to the OHP and some learners don't get involved and I tend to ignore them." He became aware that "more interaction happens when I am not standing behind a desk or the OHP." He shared how he was using his practice theory when he said "lately, I have been trying to move to the centre of the class." He stated that "no one told me this, it comes with practice."

6.7.3.3. Expectations and benefits

Mack had expectations of what the mentor teacher should do. One particular expectation was that the mentor teacher should be present in the classroom with him throughout the practicum period. But this did not happen and even though Mack at first was upset by this, this was he realised a good thing for him as "I was given space to learn about things by myself". In a way the absence of the mentor teacher was support of an indirect nature for Mack. The direct support that was provided by the mentor teacher was in terms of discussing and illustrating how to integrate the policy requirements, resources and guidelines for teaching and assessing particular sections and providing constructive assessment for the learning operation. Mack found this beneficial because the mentor teacher was very supportive and she indicated clearly in the learning task assessment what his weak and strong points were and she gave useful suggestions. Mack decided that it was to his benefit if the mentor teacher "was sort of critical of us".

6.7.3.4. Ideas, guidance, assessment, reflection and life factors

During the specialisation sessions ideas about facilitating learning were discussed in the light of the student teachers' beliefs and practices of facilitating learning. Mack stated that he used all the things about how to design a learning task and how to facilitate learning as opposed to teaching that he got from the discussion sessions. Mack stated that "I am

constantly growing on ideas from the specialisation programme." The specialisation lecturer according to Mack gave "good guidance with regard to the learning task presentations that we did". He described how he constructed his practice theory of assessment criteria for assessing a learning task when the specialisation lecturer suggested that "to maintain learning you need to ask the learners questions so that you can improve the quality of their learning; bring in a criterion like, are they talking to each other about it". Besides the advice given by the specialisation lecturer Mack developed awareness of what particular aspects of his facilitating learning practice he could improve on, from observing a video of himself facilitating learning and assessing his practice. Mack assessed himself as "you can improve". He was aware, for example that his time management, initiating learning instructions and managing learner discipline could be improved on. Mack thought that reflecting was important for his development, as it was during these reflection specialisation discussion sessions that the specialisation lecturer and the student teachers "reflected on what we had done and on how we could improve them to make them more effective." Mack thought that the discussions during the specialisation sessions were constructive and the student teachers were challenged to think about their personal and professional identity and personality. He stated that they had "work(ed) on how we can better the factors in our lives and shape them to our personality."

6.8.   Step 6: Evaluating Action

The descriptive data in this step was concerned with evaluating the impact of the various strategies and actions on the student teachers' construction of their practice theory. The student teachers' responses for step 2 were compared with their responses for step 5. A detailed report of the data collection, descriptive data analysis process and the descriptive

data are presented in appendix 1, section II – cycle three in the DVD). The analysis process of the descriptive data and the emergent themes are presented in 6.8.1. and 6.8.2. respectively.

6.8.1. Data Analysis

The descriptive data was read and emergent themes were developed from the data.

6.8.2. Themes

6.8.2.1. Appropriate strategies for learners to develop knowledge

From their observation and assessment of Life Sciences teachers teaching, the student teachers all focused on what they could do with the learners for effective facilitation. They, for example, constructed perceptual knowledge about the use of appropriate strategies to enable the learners to construct knowledge for themselves and on how they (the student teachers) could maximize teaching time. In exploring their meaning of a practice theory, it was evident that they viewed practice (action of facilitating learning) as a central tenet of a practice theory. They thought that this practice theory was linked to a person's beliefs about facilitating learning. At this stage of the programme, they were for the first time designing a section of a learning task. They thought that in designing a learning task they would have to use their practice theory, which they did do. They also used their beliefs about how learners learn to develop the learning task and they realised the importance of having an understanding of pedagogic content knowledge when developing learning tasks. The preparation to facilitate learning activities that the student teachers experienced served to support their construction and use of their practice theory.

6.8.2.2. Reflecting

The beliefs that Bernice, Carol and Mack had were enhanced by their reflections (Korthagen, 2001c; Wade & Yarborough, 1996). It was through reflecting that each of the

student teachers could share their beliefs and experiences (practice) of facilitating learning. During the process of reflecting the student teachers were also constructing knowledge about how and when to reflect. Carol shared that she "did not know what to do, I just guessed". The student teachers used the knowledge that they constructed form the action of reflecting on how they reflected (the process of reflecting) for their practice theory. In this enabling, reflective learning process each student teacher was learning how to reflect and also how to facilitate learning.

The student teachers experienced the reflective learning process in solitary and social settings (Zeichner & Liston, 1996) outside of the specialisation sessions. The reflections shared during the social setting served to inform their understanding of: who I am as a person (identity), what is my role of, and professional identity of being a Facilitator of Learning? The student teachers experienced relief from intense negative emotions and they engaged in an essential construction of self-confidence, during these social settings. This value of togetherness in frustration for learning alludes to the social learning that was essentially necessary for each student teacher's construction of a practice theory (Claxton, 1999; Lebler, 2005). This value of togetherness in frustration for learning prompted the student teachers to organise meetings outside of the specialisation meeting times. These meetings gave the student teachers space to share and value themselves as individuals, Facilitators of Learning and provide co-operative support. Even though in Carol's words the meetings were "not very constructive as it was just a moaning session" they were critical for the student teachers to develop as persons. It was during these meetings that they "spoke about our frustrations and the difficulties that we were experiencing". These reflections were analytical, not descriptive (Zeichner & Tabachnick, 2001; Leavy, 2007). So, during these meetings the student teachers were crucial co-constructors and co-operative support for one another. These social settings where togetherness in frustration

for learning transpired, were essential for the student teachers' construction of a practice theory of, and for, facilitating learning.

6.8.2.3. The construction of a practice theory comprised both cognitive and perceptual knowledge

The student teachers experienced challenges to the construction of their practice theory. These challenges were in terms of the learning task design, operation and assessment. According to Bernice, she constructed her practice theory from "her operationalisation [of learning tasks], assessment and reflections" and "learnt from the learners' response". Carol constructed her practice theory from "the experience at the schools" (Amarel & Feiman – Nemser, 1988) and Mack from his "experiences of facilitating learning". The student teachers' practice theories were not transmitted from a teacher educator to the student teachers (Von Glaserfeld, 1984; Korthagen, 2001). They were self constructed from individual and also social settings (Wortham, 2001; Van Huizen et al, 2005).and they were further developed by the integration of education theory. The common denominator for the self-construction of practice theory was for each student teacher to facilitate learning in an actual classroom.

The practice theories of all three student teachers focused on themselves (each student teacher) on what they could do to facilitate learning. While Bernice's and Mack's theory focused on organisational aspects in an unemotional manner, Carol's theory focused on her actions of interacting with learners, in an emotional manner. One of Mack's organisational aspects focused on his spatial position in the classroom in relation to the learners. He was aware that the distance between him and the learners impacted negatively on how he could manage discipline and also keep the learner's attention (Saunders, 1992).

Korthagen (2001) reminds us that practice improves due to the perceptual knowledge that is constructed.

Bernice, Carol and Mack's feelings about facilitating learning impacted on their construction of their practice theory. This impact of emotions on learning is stated in the literature by Hargreaves (1998). Feelings of uncertainty as expressed by Mack were linked to "what exactly I am going to facilitate and how I am going to go about it (facilitate the learning tasks)". The student teachers' feelings that they experienced were also linked to how learners responded "they are quite excited about what the surprise is and now I am excited" (Bernice) and in Carol's words "I was disappointed, I expected more of them [from the learners]. The student teacher's feelings were in waves of despair and elation.

The student teacher's feelings impacted on their beliefs about teaching and learning. This relationship is discussed in the literature by Korthagen (2001b). This was evident from comparing the statements that they made after facilitating learning of their first and their last learning task for the first school-based session. Bernice was concerned with "how to get them [learners] started properly." She then believed and acted on what she needed to do as the "learners just started the work". Mack's beliefs about group work were challenged in that he did not understand how to get them participating in the group. His belief about what to do was perceived when the learners in their groups "were brainstorming". Carol's beliefs were that the "skepticism … about this new paradigm was soaring and I was sure that it would never work". She then realised that "this new paradigm in education is not absurd as I thought." These beliefs depended on the student teachers using inner wisdom and authority as suggested by Ray (1999). Bernice, Carol and Mack's beliefs played a crucial role in promoting their paradigmatic shift (Slabbert, 2007). But this shift was possible **ONLY** due to the student teachers being placed in new,

challenging situations where they risked these new unknown practices and created the reality of their belief. This type of shift has been described in the literature by de Kock and Slabbert (2003). In these encounters with practice the student teachers adopted the "belief initiated mental model" which is described by de Kock and Slabbert (2003) in the literature chapter.

6.8.2.4. Mentor teachers varied in their contribution to the student teacher's construction of their practice theory.

Even though Bernice was happy with her mentor's support she only used her (the mentor teacher's) learning task design ideas and her disciplinary measures. Carol was "confused" by her mentor's assessment of her learning task operation and thought that her practice theory was not influenced by her (mentor teacher). What Carol did perceive though is that her mentor cared for the learners and had her own practice theory. Mack experienced a revelation that the absence of the mentor from the classroom gave him "space to learn about things by myself". But he had used the support and guidelines that she had provided. Even though she was "sort of critical" of his lessons he valued her constructive suggestions and the spirit in which it was done.

6.8.2.5. During the specialisation sessions

This contribution was in terms of the syntactical aspects as expressed by Bernice "administration stuff, not really with content and context stuff." This programme was not in accordance with Mack's expectation of learning about "how to teach sections of Biology" and Carol's "what we got was not what we expected at all". Even though Bernice perceived it as not having "contributed a lot … as it was not practical" to implement she did learn how to assess her practice of facilitating learning. Carol on the otherhand perceived it as "not useless because we use some of it and it helps to develop overall."

Carol had also internalised (Korthagen, 2001) her experiences of the specialisation discussions as she was aware that she should "not explain any theory to them [the learners], they must read the instructions and interpret them". She also realised that she needed to know more about particular content areas and she took the necessary action "go and learn more" to achieve this. This focus on taking responsibility for her own construction of her practice theory was essential for Carol's perception of herself as an effective facilitator of learning. Mack attributed his construction of his practice theory to the theory and action that was shared during the sessions about facilitating learning. He came to realise what changes he had to make for him to facilitate learning effectively. He valued the contribution and focus of the specialisation programme in focusing on "how we can better the factors in our lives and shape them to our personality." And most importantly he was aware of his gains "I am constantly growing on ideas".

A significant development during this cycle is that the student teachers reflected on their experience of collegial support that operated outside of the specialisation sessions, only among the three student teachers. Overall, the reflections that the students made were essential for them to think deeply about their constructed meaning of their practice theory and to challenge this meaning.

Each student teacher actively participated in the interventions and constructed their particular practice theory. They were experiencing a transformation in their feelings, beliefs and practice of facilitating learning. These transformations impacted on the student teachers' construction and use of belief-initiated mental models (de Kock & Slabbert, 2003).

6.9.   Conclusion

Analysis of the student teachers' practice theory regarding their preparation to facilitate learning in practice and regarding their facilitating learning in practice produced a number of themes. These themes describe the dimensions of how the student teachers constructed their practice theory and how they used the contribution of the mentor teacher and the specialization programme to enhance their construction of their practice theory. Evidence was presented to support the themes developed. In the next chapter the analysis of how the student teachers used and further constructed their practice theory in cycle four will be presented.

CHAPTER SEVEN
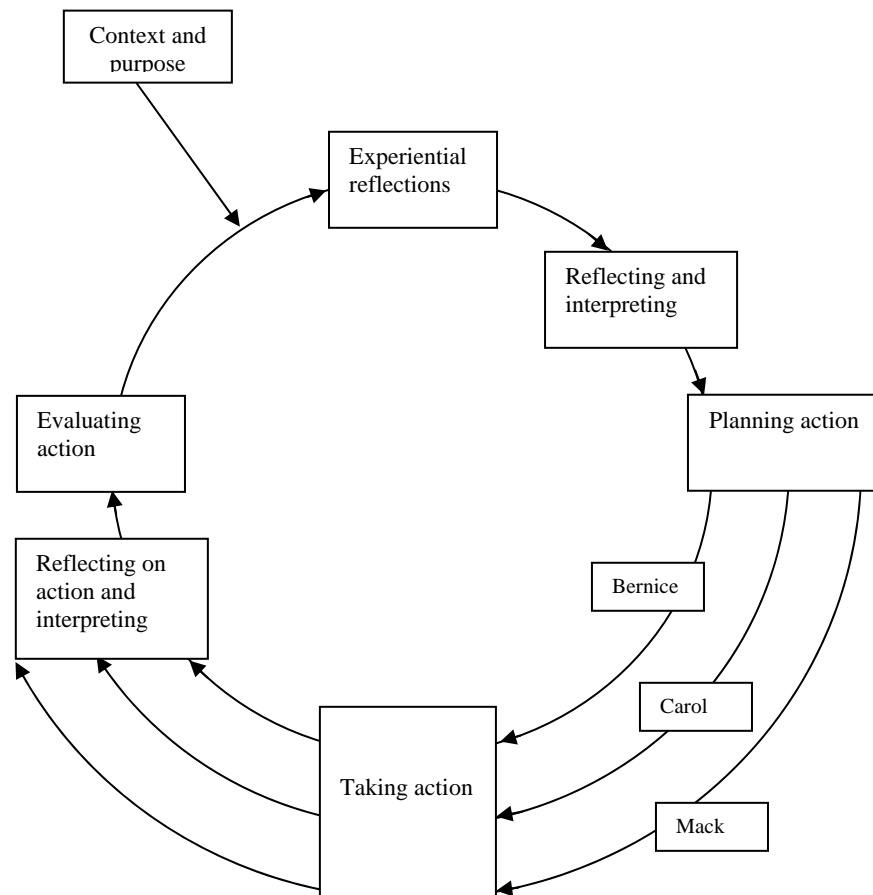
CASE STUDY PARTICIPATORY ACTION RESEARCH CYCLE FOUR

7.1.   Introduction

The purpose of this chapter if three fold: first it hopes to present the sequence of this cycle in relation to the other three cycles, observed in Table 8 (see shaded area). Second, it presents the case study participatory action research cycle model used as observed in Figure 3. Finally it describes the data analysis process and presents the analysed second level data in the form of themes for each of the steps in the cycle and conclusions are reached.

Table 8: Sequence of cycles

Action research cycle one	Action Research cycle two	Action Research cycle three	Action Research cycle four
Weeks one, two and three	Weeks four, five and six	Weeks seven to seventeen	Week twenty to thirty-nine

Figure 3: James model for cycles three and four.

7.2. Context and purpose

7.2.1. Context

The contexts for this cycle were the school that each student teacher was assigned to and the university site. The student teachers spent eight weeks at the school. They observed their assigned mentor teacher teaching and they started preparing the learning tasks for facilitating learning during the first week. They then facilitated learning for seven weeks. During this cycle the student teachers attended specialisation sessions at the university. The participants in this cycle were the student teachers, the specialisation lecturer, teacher mentor, the student teachers' peers and the researcher.

7.2.2. Purpose of cycle four

Three dimensions underpinned the purpose of cycle four. These dimensions were, first, to challenge each student teacher's practice theory regarding his/her *preparation* to facilitate learning in practice. Second to challenge each student teacher's practice theory regarding their facilitating learning in practice during an extended school based learning period (seven weeks) and, third to assess each student teacher's practice theory through the presentation of a Professional Portfolio during a Portfolio Defense session at the end of the programme. In terms of the first dimension, student teachers were encouraged to utilise their practice theory as an assessment tool for observing mentor teacher teaching at a placement school and reflecting on and sharing their experiences as the outcome. The other aspect involved challenging each student teacher's constructed meaning of practice theory through the analysis of the learners' level (standard of work and the context of the school. It was also important that each student teacher was challenged to assess his/her progress with regard to facilitating learning in practice. The answers to the questions were also explored for a better understanding of their practice theory construction.

With regard to the second dimension, student teachers were challenged about their

Learning task design by the student teachers, Learning task operation by the student teachers, Learning task assessment by the student teachers, their peers, the teacher mentor, the specialisation lecturer, and the researcher and, participation in specialisation sessions. The student teachers were expected to reflect on and share their experiences regarding the above.

The third dimension, as already explained, focused on the end of the programme.

7.3. Step 1: Experiential reflections

Bernice, Carol and Mack's experiences of tutoring learners at the placement school, their observation of the mentor teacher teaching, their meaning of practice theory, and their constructed practice theory of designing learning tasks were elicited during the university specialisation sessions. These student teachers' elicitations (responses) represented the descriptive data. A detailed report of the data collection process, the data analysis process and the descriptive data are presented in appendix 1, section II – cycle four in the DVD. The analysis process of the descriptive data and the emergent themes are presented in 7.3.1. and 7.3.2 respectively.

7.3.1. Data analysis process

The descriptive data was further analysed for emergent themes. The descriptive data was read and relationships that were present in the data between the categories previously deduced, were established. The themes are presented in 7.3.2.

7.3.2. Themes

7.3.2.1. Features of effective teachers

The student teachers compared the first and second mentor teacher's teaching. In making these comparisons they challenged and extended their constructed meaning of the role of an effective facilitator of learning. This is supported by Bernice describing her second mentor teacher as different from her first one in terms of her teaching approach, her management of discipline and she decided that these were having a negative impact in terms of "spoiling the learners". A further example of this re-construction can be seen in Mack's case where he characterised an effective teacher in terms of how she managed her

time. This is evidenced from the statement that he made where he stated that the teacher was "brilliant; she must be one of the best mentors". The student teachers could also make judgements about the mentor teacher's competence with regard to her teaching abilities to teach. Carol judged her mentor teacher as having "old ideas of teaching".

7.3.2.2. Learner work and teacher expectations generated ideas for effective practice

Bernice stated that the learners at her second school were used to people going down to their level, and "they are fed everything because the teachers think that they are not capable". Carol evaluated the standard of work at the school as "low." The reason that she gave for her evaluation was that the learners "did not want to do much work … but this was due to the teacher, who only gave them a little work." The student teachers were aware that in Mack's words if more is expected of the kids "they perform." He also associated the learners' performance to the type of school and the ethos of teaching and learning that was present at the school. The student teachers made decisions about how they were going to work with the learners and why they were going to do this. Bernice decided that she was going to get the learners to do extra work, but in order to do this she would have to "boost the learners' confidence" to get them to want to participate and perform. Carol, on the otherhand, facilitated learning during this week and she realised from this experience that she expected too much from the learners and that in order for her to construct an understanding about the performance level of learners in grade 10 it "would have to come from experience and a talk to my mentor".

7.3.2.3. Comparison reveals progress, weaknesses and betterment

The student teachers had developed an awareness of their progress by comparing their first experience of facilitating learning with this second experience. Bernice thought that her

progress at the beginning of this second session was already better compared to the first session when she "felt like she was nowhere." She gave an example of her progress now as "the assessment is much better because my first assessment stuff was kind of don't know how to, where to". The student teachers were aware of their weak points in facilitating learning during the first session and they made decisions about how they could improve on these weak points. This awareness was in the case of Carol and Bernice enhanced by the fact that they were doing the same learning task that they did in the first school (Zeichner, 1990). For Bernice, she knew what was expected of her and she could "see how the facilitation of learning could happen better" (Claxton, 2000). in facilitating learning in this learning task.

7.4. Step 2: Reflecting and interpreting

Each student teacher reflected on what he/she shared during the experiential reflection step. As these reflections were crucial to opening up each student teacher's feelings, thinking and action of their shared experiential reflections and the intervention and meaning given to these experiential reflections I identified reflection factors (questions) and interpretations (responses) from the data. The reflection factors in this step were on the role of the specialisation lecturer in the specialisation sessions, the participation of the student teachers in the specialisation sessions and on the student teachers' reflections on the utilisation of their practice theory as an assessment tool for observing mentor teachers teaching at a placement school. These student teachers' reflections (responses) represented the descriptive data. A detailed report of the data collection process, the data analysis process and the descriptive data are presented in appendix 1, section II – cycle four in the

DVD. The analysis process of the descriptive data and the emergent themes are presented in 7.4.1. and 7.4.2 respectively.

7.4.1. Data analysis process

The descriptive data was further analysed for emergent themes. The descriptive data was read and relationships that were present in the data between the categories previously deduced, were established. The themes are presented in 7.4.2.

7.4.2. Themes

7.4.2.1. Challenges, sharing and decisions about facilitating learning

Professor Ned provided the context for the session and he asked the students to share their reflections with respect to their experience at the placement school. As the student teachers shared their reflections he challenged them to dig deeper and to share at a meta-cognitive level what and why they had the particular concrete experiences at the placement school. He challenged them to use their constructed practice theory to give meaning to the concrete experiences that they had experienced at the placement school. He also expected them to make decisions about how they would facilitate learning in the particular placement school contexts that they had experienced. Since this interaction between the specialisation lecturer and the student teachers was later in the year he did not have to prompt the student teachers to share their reflections and he did not *project a power* relationship.

7.4.2.2. Relaxed and comfortable with sharing experiences

All the student teachers participated as each was expected by the specialisation lecturer to share their reflections of their concrete experiences at the placement school. All three

students were relaxed and comfortable with sharing their thoughts, actions and feelings that they had experienced. A sense of safety and trust had developed amongst them and also with Professor Ned. This safety and trust relationship is coupled with the fact that the student teachers were developing in confidence and knowledge about what they expected of themselves and the positive feedback that they received from their own actions.

7.4.2.3. Teacher critique generated awareness of practice theory and ineffective practice

As the student teachers used their practice theory to assess the teachers' teaching they became more aware of the nature and content of their own practice theory. They viewed this experience as a good learning experience. The student teachers were comfortable with assessing the mentor teacher's teaching. They were pleased with the action of being able to assess the lesson and project their role in facilitating learning as much more than what the teachers were doing in the classroom. The student teachers were unhappy and frustrated with observing how the teachers taught as they did not challenge the learners instead they were in Bernice's words "spoiling the learners."

Step 3:   Planning action, step 4: Taking action and step 5: Reflecting on action and interpreting

Step 3, 4 and 5 for each of the student teachers are presented in this section. Steps 3 was concerned with the student teachers planning (designing) their learning tasks and their professional portfolio. The descriptive data collected focused on the how the student teachers planned (designed) their learning tasks and also on how they designed their professional portfolio and planned for their portfolio defense. Step 4 was concerned with

the student teachers taking action in terms of operating learning tasks from week twenty three to twenty nine (seven weeks). During this time, the student teachers participated in specialisation sessions at the university. They also presented their professional development portfolios during week thirty nine of the programme. The descriptive data collected for step 4 focused on the operation and assessment of the student teachers' learning tasks, the nature and content of the specialisation session, and the nature and content of the professional portfolio and the portfolio defense. Essentially, descriptive data collected during the specialisation sessions focused on the student teachers' observations, assessments and suggestions made on how to improve the recorded learning tasks operated by Bernice and Mack. The descriptive data also focused on the short paragraph on who am I (an identity description) and the Personal profile questionnaires: Neethling Brain Instrument, Temperament indicator and the Self Image Evaluation for each student teacher. The descriptive data for the professional portfolio and the portfolio defense focused on the selected work done by each student teacher, which could be used to represent his/her development from the beginning to the end of the programme and to compile this in a portfolio – Professional Portfolio. In short, each student teacher had to select work that represented his/her professional competence. These selected pieces of work were to be supported by substantial and meaningful reflections from each student teacher. Step 5 was concerned with the student teachers' reflections on the taking actions step. The descriptive data collected focused on the student teachers' construction of a meaning for practice theory and the role of a facilitator of learning, construction and use of the theory of facilitating learning practice, the contribution of the mentor teacher towards the student teachers' construction of practice theory and the contribution of the specialisation programme towards the student teachers' construction of practice theory?

A detailed report of the data collection process, the data analysis process and the descriptive data for each of the steps 3, 4 and 5 are presented in appendix 1, section II – cycle four in the DVD. The descriptive data was further analysed for emergent themes. The descriptive data was read and relationships that were present in the data between the categories previously deduced, were established. The themes are presented in 7.4. for Bernice, 7.5 for Carol and 7.6 for Mack over the next few pages:

7.5. Bernice

7.5.1. Planning action

7.5.1.1. Relevance and interest for learners

Bernice was aware that the learning task should be relevant and interesting for the learners. In planning a learning task on blood circulation she was aware that she needed to focus on a relevant, challenging problem associated with the transmission of HIV during blood transfusions. She therefore planned the problem and asked the following question: How will you ensure that you get uncontaminated blood?

7.5.1.2. Planning the Professional portfolio was linked to her development as an equestrian rider

Since Bernice is an equestrian rider, she planned a portfolio that reflected her love for horses. She had compared her development as a facilitator of learning to her development as an equestrian rider. This is evidenced in the metaphors that she used in her portfolio. She used the metaphor of Man meets horse to represent her initial experiences of the PGCE, the metaphor of mount up to represent her development as a facilitator of learning

during the PGCE, the metaphor of Upgrade to represent her final outcome as a facilitator of learning.

7.5.2. Taking action

7.5.2.1. Revealed competence as a facilitator of learning

Bernice was competent in initiating the learning task problem and managing the learners' response to it. She had incorporated co-operative learning strategies in that each learner worked individually and then in a group setting. She operated as an effective facilitator of learning in that she patiently interacted with the learners and she convinced them to work on their own ideas and she moved from group to group asking questions and providing support to the learners.

7.5.2.2. Assessment of the learning task for self-awareness and constructive support

Bernice became aware of her strong points and weak points of operating a learning task from the learning task self-assessment activity that she completed. She used this information to identify and act on her weak points during the operation of her learning task. This self-assessment of the components of the learning task was essential for a student teacher to develop awareness with regard to the weak and strong points to facilitating learning in practice. It is also essential that this assessment includes suggestions and recommendations for improvement. This is evidenced in the researchers' assessment where the learner group session was rated as good and advise was given on how she could effectively manage her time and group outputs.

7.5.2.3. Observation of self practice revealed weaknesses

The nature and structure of the specialisation session enhanced Bernice's construction of her practice theory. Since Bernice had to observe and assess a video of her facilitating learning and her colleague facilitating learning, she realised that she (as a facilitator of learning) needed to work with accurate information and that she could distract learners while initiating learning, if she carried out certain behaviours.

7.5.2.4. Exploration of the personal – professional relationship reveals the type of facilitator of learning and personal characteristics

Bernice was aware of her own identity in that she described herself as an introvert who has a "stable sense of self worth, self–confidence and spontaneity" and believes that "the more I have to do, the more I am able to do!" Bernice's score for the Temperament indicator conflicts to an extent with her judgment about the type of person she is. While she views herself as an introvert and admits to hiding this by her other qualities, the indicator assessed her as an Influential Choleric (outwardly forceful) person who is outgoing and task-oriented. The Self-Image Evaluation (58) indicated that she has a dissatisfied self image. This could be due to the professional pressures, the expectations and changes that she is experiencing. Bernice functions as a R1 person who has a strong L1 preference as well. This is evident from her scores on the Neethling Brain Instrument (L1:80; L2:70; R1:85; R2:65). The personal characteristics that Bernice has, for example, preferring the big picture not the detail, searches for alternatives, becomes bored quickly, and who is comfortable with chaos, fantasy, surprise, association are borne out in the type of teacher that she is described as – an R1 trainer/teacher (facilitator of learning). This type of teacher (facilitator of learning) usually gives a holistic view of the lesson and prefers to

link it to other subjects and point out how it applies to the real world, encourages spontaneous participation and includes a fun element in parts of the lesson.

7.5.2.5. Presenting the Portfolio at the Portfolio Defense revealed and confirmed her development

During her presentation Bernice stated that "the most amazing thing for me that I learnt is that I can facilitate learners and a traditional lesson is so incredibly boring." She saw her role as that of a facilitator of learning when she is at a school. She did not see her role as a teacher where "I go out next year saying to the learners that they must take out a book and write this in your book." She saw her learners as not been bored and "they will learn so much more."

Bernice described the construction of her practice theory at the beginning of the programme as "where you get theory in a book" and later during the second school based education as "I started thinking that developing practice theory is not so difficult." She was of the belief that "practice theory without a foundation" could not be constructed. She thought that the interventions that she had experienced during the programme were crucial for her construction of her practice theory when she stated that "you cannot leave someone to do something totally on their own". She did express that she had experienced frustration during the programme. This frustration was related to the schools in that "in the schools we do not see the things that we learn about at university, we do not see it at all at the school." She expressed her gains from the programme "personally, from the PGCE I have learnt to work with different people with different personalities."

7.5.3. Reflecting on action and interpreting

The reflections that Bernice shared on a social and personal level were essential for her construction of her practice theory of facilitating learning in practice. In reflecting Bernice had to elicit her beliefs, thoughts, perceptions and feelings about being a facilitator of learning and her experience of facilitating learning. .

7.5.3.1. Learner responses, awareness of learning task design and personal characteristics

Different factors during the learning task operation influenced Bernice's construction of a meaning for practice theory and the role of a facilitator of learning. Bernice felt pleased about the learner responses during the learning task that she operated in that "all the learners, except the two in the front, were working, even the ones that never work … the meta-learning went well." She was also pleased with her choice of problem as it concerns all of us and "the learners realised it was a real life problem" and they were aware of it in their lives. Bernice believed that "patience is a very important characteristic of a good facilitator of learning." She said that "I enjoy teaching and I love the kids …and I got them to do different things."

7.5.3.2. Learning from practice, challenges and feelings

Bernice was aware of what still challenged her when she stated that "I do not believe that I have perfected the problem statement, learning task design or learning task presentation." She was aware that by her practice of facilitating learning she would improve. She used a metaphor to describe this learning "after four years of show horse riding, I still fall off now and then! One is never too old to learn and experience comes with time." Bernice was aware that her feelings about her choice of problem for the operation of the learning task

stemmed from the fact that as a facilitator of learning she could "use real world problems that the learners could relate to."

Bernice had expressed that a challenge in designing the learning task was thinking about ideas on what to do. The intensity of this challenge is observed from the fact that she grappled with it for some time and then "the idea to do this came to me when I was in bed just last night (the day before she was going to facilitate learning). Even though she had planned the learning task she was not pleased with what she had planned, hence the ongoing thought planning. Bernice though did not feel challenged by operating the learning task, since she realised that she had taken into account her knowledge of facilitating learning and she had "attempted to meet all the requirements of a good learning task presentation (LTP) as specified in the Study Manual for Facilitating Learning (Slabbert, 2004, p. 16)." Bernice did feel challenged though that she had not made any "allowance for meta-cognition." She was aware of what she needed to do but did not put it into practice as evidenced by "this is the conflict with my practice theory. I did however; rectify this in the next learning task that I have designed."

7.5.3.3. Awareness of negative features of practice led to decisions about facilitating learning

Bernice had expressed that she had not learnt much from her mentor in that she (the mentor teacher) "was not good with the learners and I learnt how not to behave with the learners." Since Bernice labelled her mentor teacher as a "monster with the learners" and she felt that it was "punishment for me to sit in the class and observe her yelling at the learners". Bernice decided and she knew that she was going to act differently with the learners.

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7.5.3.4. Support, participation and idea sharing

In reflecting on the contribution of the specialisation programme towards her construction of her practice theory, Bernice expressed that "the comments the professor made were very helpful. The ideas that he gave me were very good." Bernice was aware that her "role as a specialist facilitator of Biology" was enhanced by her participation in the specialist sessions. She enjoyed the interaction and exchange of ideas that took place during the specialisation in that she stated "one of us would throw ideas and another would get ideas".

7.6. Carol

7.6.1. Planning action

7.6.1.1. Experience of designing and practice of operating learning tasks

Carol's learning tasks on Mammalian tissue and the Human skeletal system, Human blood circulatory system. had the required features as depicted in the module documents for the Life Sciences PGCE student teacher. Carol's designing the learning tasks during this facilitating learning session was influenced by her previous planning and practice of designing and operating a learning task. As Carol was to facilitate the same learning task that she had designed and operated at her previous school, she was aware of the features of the learning task that required modifications and she could act on this.

7.6.1.2. Planning the Portfolio to show professional and personal development

Carol stated that she had planned the portfolio "to show my professional development as a facilitator of learning during this year" and to reflect "her creative development." She

stated that in her professional portfolio she had "included all the items and evidence of things that had made an impact on her professional development as a facilitator of learning." She also shared that "my personal development contributed to my professional development and I included this as well in my professional portfolio." Evidence of this is the following quote from her professional portfolio:

During the year I encountered a variety of experiences and situations.…I gave my first baby steps as a facilitator of learning in my first SBEP1 and could handle myself with confidence in my second school based education programme (Carol, portfolio, 2004).

7.6.2. Taking action

7.6.2.1. Affirmation and expectations

At this point in time Carol had planned and operated learning tasks and she did not feel threatened by this task. She was aware that in operating the learning tasks she had to work with the expectations of the new paradigm.

7.6.2.2. Assessment of the learning task for self-awareness and constructive support

Carol as a result of operating and assessing her own learning tasks became aware of what she did, for her to assess the learning task operation as "it went well". She was also aware of her strong points, for example, she used a real life context problem that had adhered to the problem design criteria and had used meta-learning where learners planned, monitored and assessed their own individual learning. Her weak points that she was aware of was that she needed to "work with the meta-learning questions" in formulating them in a more challenging and appropriate manner.

The assessment by Carol's peer, the mentor teacher and the researcher served to be constructive for her development and learning. Her peer assessment was supportive and filled with praise for her excellence in facilitating learning. The mentor teacher and specialisation lecturer's assessment indicated a final assessment and complimentary and advice statements, for example, "enjoyed the learning task presentation immensely" by the mentor teacher and "look at how you can improve the instructions" and "the individual work – meta-learning" by the specialisation lecturer.

7.6.2.3. Observation of colleagues facilitating learning led to a realisation of effective practice

The nature and structure of the specialisation session enhanced Carol's construction of her practice theory. Since Carol had to observe and assess a video of her colleagues facilitating learning, she observed that the learners during the initiating learning phase of the learning task operation were "noisy in the beginning and it got worse". This made her realise that during this phase learners should be quiet and listening to the instructions (organisational aspects) of the learning task. This consideration for student teachers to plan the initiating learning phase when operating a learning task carefully is supported by Slabbert (2007), since this phase is the only one that can be designed.

7.6.2.4. Exploration of the personal – professional identity revealed the personal and professional development of student teachers

Carol was aware of her personal and professional development from the beginning of the programme to this point in the programme. At the beginning she was a "shy, introverted person" who doubted if she could stand confidently, with authority in front of a class and now even though she was still shy and introverted she had developed her self-image and

was a confident professional facilitator of learning. She concluded that this development was "through experience". Carol, in going through this experience, also became aware that she could be a creative person and she could, with effort, hard work and time come up with ideas for facilitating learning in practice. As a result of this awareness, she decided that when she planned a learning task she would make a "conscience decision to look at the positive aspects of what she had done" and in doing so this would then have a positive impact on her personal development – she would be able to handle negativity and stress. This thinking was important for her development as her score for the Self-Image Evaluation (63) indicated that she had a dissatisfied self image.

Carol's scores on the Neethling Personal Skills Instrument were L1:81; L2:77; R1:72; R2:70. Carol was analysed as the type of person and 'teacher' that sought accuracy, works for precision, critical correctness – not to make mistakes, is goal oriented, and facts and rational information are of fundamental importance. Carol was also analysed as an authoritative trainer who likes to be in control of the situation at all times. Carol's score for the Temperament Indicator indicates that she is a Perfectionistic Melancholy (introvert) who is withholding and task-oriented. These two objective tests foregrounded Carol's personality as a person who was a perfectionist and needed to be in control. As Carol was not entirely in control of facilitating learning and she had experienced stress and negativity, she developed a dissatisfied self-image.

7.6.2.5. Presenting the Portfolio at the Portfolio Defense revealed her experiences that led to her development

Carol in presenting her portfolio described the developments that she had experienced in that at the beginning of the year she "started off as a teacher and at the end of the year I

was a facilitator of learning." She also shared her most memorable learning moments during the year which was when she had "the experience in my mentor teacher's classroom where I had the "aha" feeling and the learning task on levers where I wanted to see if it would work and it did." She described her practice theory at the beginning of the year as "it was just a theory but later I constructed my own meaning about these aspects." She thought that the discussions and explanations during the specialisation and her own actions were crucial to her constructing her own theory when she said "I decided to stand up/wake up." She also said that reflections helped her construct her practice theory as she "could see what works and what does not work." Other factors that had the greatest impact on her development was "meta-learning, everything linked to learning; my experience at the second school [which] was a diverse environment". Carol said that all these experiences "opened my eyes." Carol concluded that she had "experienced three years in one [the one year of PGCE, as] there was so much that I had to take heed of" and learn. She declared that if she had not done this PGCE programme "I would not have changed my understanding of what a teacher is and I would have been a teacher." She described the feelings that she had experienced during the programme as "I had all ups and downs, it is hard work and you experience feelings of being satisfied and unsatisfied. At the end you feel satisfied." Carol stated that she had "come a long way, it was definitely not a waste of my time and it does not stop here." She described her experience as a "huge stepping stone to the rest of my life." She also described the impact that this programme had on her personal development as "personally I have developed - I was very afraid, I was a terrible person and I do not want to be this type of person. Now I have become a stronger person, I have grown up in the class."

7.6.3. Step 5: Reflecting on action and interpreting

7.6.3.1. Observations of practice and context versus self-awareness and improvement

Carol's meaning of the role of a facilitator of learning was constructed from her experiences at the school. From her experiences she concluded that the teacher role was "boring and not just for me …I can see that the learners are not listening and I am feeling frustrated." Carol thought that she "became more professional as a facilitator" during this school-based period. The reasons that she gave for these were "because of the setting, the high standards and pressure that the school and the parents place on the learners … I became more confident in my abilities as a facilitator of learning". Carol was aware that her role as a facilitator of learning was made easier by the type of person she was – her organisational and planning skills were quite good. She believed that as a facilitator of learning you could always "improve on any part of your repertoire".

7.6.3.2. Self- learning from practice, assessment and reflections

Carol thought that she constructed her theory of facilitating learning when she started "with a learning task design… firstly plan everything and then go and operationalise your learning task." She realised that "you learn through practice theory and if you do not get your practice theory you will have a problem facilitating learning." She stated that when she took a learning task that she had used in the first school-based session and she improved on it and then presented it to the learners during the second school-based session, her "meta-learning was improved tremendously (I think it was the best meta-learning of all my learning tasks)." Carol concluded that her "practice theory has had an impact on the way I design and operationalise my learning tasks" and as a result she could plan quickly and she could also think about changes to make more quickly. She was aware that before she had constructed her practice theory she "needed the exact structure" of the

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learning task in order for her to start facilitating learning. She believed that the "experience that you get in the classroom" was important for her construction of her practice theory. Carol realised and believed that it was not just from her own 'acting' but also from "comparing learning tasks and ideas with your fellow students" and "getting criticism and any assessment" which are valuable resources for the construction of her practice theory. She said that when she "read through the learners' assessment of me I gained a lot of knowledge of myself as facilitator." She thought that "every facilitator must be evaluated by his of her learners. It keeps you on your toes and informed about the standard and quality of facilitating learning".

7.6.3.3. Awareness of the quality of the impact and challenge of practice

Carol had constructed an awareness of the type of work that the learners were capable of doing. She said that her mentor teacher wanted her to "explain the work to the learners" not to get them to do it themselves. She thought that he did not contribute to her construction of "phronesis" as he "told me that I gave the learners too much to do and moved too fast with the learners" In reflecting and analysing his comment Carol thought that "I might move too fast but I saw what the learners are capable of if they really work." She said that he also "expected me to teach the section [on the heart] first using a transparency and then give them tasks." She decided not to do what he told her to do. Instead she "decided to do it [the lesson] in groups [learner]". She concluded that the "learners learnt more now rather than if I had worked with the transparency."

7.6.3.4. The contribution of the specialisation programme towards her construction of her practice theory evaluation for learning

Carol stated that "the specialised module contributed to my development in that my organisation is better." She said that "every session you do different things and you learn." She said that "critique helps from the specialisation lecturer, it helped a lot."

She thought that if she "did not get the explanations and discussions about the stuff, I would not have developed my own theory."

7.7. Mack

7.7.1. Planning action

Mack had planned a learning task on the Blood circulatory system for Grade 10 learners. This learning task had the required features as depicted in the module documents for the Life Sciences PGCE student teacher.

7.7.1.1. Influenced by the practice of designing and operating a learning task

Mack had planned learning tasks for the first school-based session and he was aware that the learning tasks should have particular features. He planned his learning tasks in such a way that the context, including the resources, class organization; cooperative learning groups, assessment – methods, tools and techniques were clearly outlined and integrated. As he had constructed the knowledge and skills of assessment strategies, he planned learning task where individual, group and peer assessment rubrics were included.

7.7.1.2. Planning the Portfolio for the Portfolio Presentation Defense

Mack stated that in developing the portfolio this "helped him to focus on consolidating what he had done over the year, helping him to focus where he had developed, how he developed, and looked at what the learners produced. In his portfolio Mack planned to insert evidence of his understanding of what he learnt and what he needed to change with regard to facilitating learning. He came to realise that "there is a very big challenge for me to be firmly grounded in my knowledge of the subject before I can facilitate" learning and "how important the LTP (Learning task presentation) is and how important it is to follow the guidelines for successful LTP."

7.7.2. Taking action

7.7.2.1. Learner responses and time

Mack was aware from operating the learning task that the learners in his class were very capable and they could respond to the challenges that he had set for them. This response informed his thinking about the competence of learners in different school contexts. Even though Mack was pleased with the learners' responses he was frustrated by his inability to complete the sections on time. He thought that he needed to manage his time more efficiently.

7.7.2.2. Self-realisation and constructive development

As a result of assessing his own learning task, Mack was aware of what he could have done differently in operationalising his learning task for it to be rated as excellent. He was aware that his major weaknesses were "non-verbal communication, discipline and consolidation", his minor weaknesses were "use of media, learner action and learning

quality". He was also aware that his good performance was "verbal communication and the competence to use a demonstration method in class.

Assessment of the learning task by different assessors is essential for constructive development in that the assessors provided constructive support. While his peer commented on, for example, his good management of assessment and groupwork and the effective use of worksheets she questioned his effective use of time. She did state though that she was "very impressed … of excellent performance of outstanding quality." Mack's mentor teacher and specialisation lecturer also identified strong and weak points of the learning task operation and they both assessed the learning task as excellent. The specialisation lecturer exclaimed that he was "amazed at what he (beginner facilitator of learning) got out of the learners – excellent work on his part."

7.7.2.3. Specialisation sessions served for further construction of practice theory
The nature and structure of the specialisation session enhanced Mack's construction of his practice theory. When Mack observed a video of himself and his colleague facilitating learning, he became aware that he needed to work on the organisational features of using group inputs to maximise learners' learning and that he (facilitator of learning) could be the cause of the learner's distraction with resulting chaotic learner behaviour. He also became aware that it was important for him to have a certainty about Biological facts and that he had to use accurate Biological knowledge when facilitating learning.

7.7.2.4. Personal and professional development
Mack was aware that his thinking and actions were influenced by his Christian beliefs and also by his current attitudes and point of view. Mack's score for the Temperament

Inventory indicates that he is a Popular Sanguine (extrovert) who is outgoing and people-oriented. Mack's scores on his Neethling Personal Skills Instrument were L1:81, L2:72, R1:79, R2:68. According to these scores, Mack has a high preference for a L1 and average skill strength for L2, R1 and R2. Mack is functioning more as a left-brained person. He used his analysis of his character to explain, assess and decide on appropriate action for him to be an effective facilitator of learning. His awareness, for example, that he is a "holist by nature, it is therefore important for me to be able to see the bigger picture rather than the isolated facts" informed his belief about how the learners' appreciation for Biology could be developed if they understand the details of Biology. He decided that he would have to "gain a stronger content knowledge about Biology". Mack was also aware of his scoring of his self-image and his progress in this regard. Even though his score for the Self Image Evaluation of 61 indicated that he has a dissatisfied self image, he stated that "I have a fairly good self image**;…**I saw that my self-confidence definitely improved as time went by and I became more comfortable in the interactions with the learners, which is a very comforting thought."

7.7.2.5. Presenting the Portfolio at the Portfolio Defense revealed challenges and developments

Mack was aware that the purpose of presenting the portfolio was to "show that I have developed in all seven roles of an educator as described in the norms and standards of Educators (2000)". Even though Mack had presented his learning tasks he still felt challenged by "what I needed to do to lead to clarifying aspects for learners and what learners really need to know, why they need to do the work and the urgency to do it." Mack was aware though that he had "experienced a lot of development" and what he needed to change when operating a learning task. Mack's critical eureka Learning task [on

Anaemia] had set him on the path to becoming "better and more interesting to learners [as] … everyone knew exactly what they were to do."

Even though Mack had knowledge of constructivism, the information about facilitating learning in the student teachers' workbook made no sense to him. He said that the only time that he came to grips with facilitating learning was "by getting into practice" and "the reflections that I did". He stated that in evaluating his reflective practice "I do think that I did not reflect enough and now I see the importance of reflection, especially critically [reflecting]."

He concluded that in the PGCE programme "I have learnt to be a facilitator of learning rather than just a teacher teaching." What he meant by this was that he was not going to "just hand out notes, regurgitate notes" as he was going to create "circumstances where learners are engaged in developing meaning of actual content, developing personally in content, how to make it real to them and for them to use it". He was aware that he still needed to work towards getting the learners to "maximise potential, but I think this is not the be all and the end all." He thought this way because he believed that as a facilitator of learning you are faced with and experience so many emotions and these are "a central aspect to facilitate learning." He described his own emotions of despondency and despair when he tried to facilitate learning "and encourage learners to complete the activity and achieve what you want them to achieve and the learners are not convinced." Mack believed that a law for facilitators of learning is that they had to "have love … [and] the way in which you encourage and support" a learner is important. Mack declared that (a) he had "reached the end of the year and I have so much that I can develop on; I am a lifelong

learner," and (b) that his personal progress "got me out of my comfort zone and I am not dependent."

7.7.3. Step 5: Reflecting on action and interpreting

7.7.3.1. Emotional, personal-professional dimensions

During his development of the role of a facilitator of learning he experienced different emotions. He felt "greatly encouraged" when he became aware of what (the outcomes) that he could expect from learners. Mack also felt confused and frustrated with himself and the changes that he was expected to make. He said "I originally intended to do [teach]. I thought, maybe it is just; I do not know how to go about the whole problem based facilitation. I don't know how I could have got them thinking about it more." Mack was aware that he needed to make his lessons problem-based and he said that "maybe I do not know how to yet." His lack of knowledge about how to work with problem-based lessons could be due to his own beliefs about working with them as evidenced by his comment "I feel that problem based lessons take a lot longer than just normal teaching. So I feel I would have got a lot more content … in this lesson if I had just been teaching." He was not comfortable and stable with his belief and what was expected of him when facilitating learning. This discomfort and instability with his belief and the expectations of what is required from a student teacher in the programme was evidenced by him saying "I mean, the process part [the development and use of process skills] is there, but I also feel that the content part is important. And maybe there is a place for …ROTE learning, whatever you want to call it."

Mack felt strongly that the role of a facilitator of learning is also to work with content and not just skills when he said "when the learners were observing the external structure of a

leaf, maybe they are observing, maybe they are getting all these skills but where is the content?" He was aware that when the learners were recording their observations that this "is content" but that "there is also a lot of content that I wanted them to get done in that one lesson". He was aware that if he stood up "and lectured it, they would not have got the skills they did in this period and they would not have probed into the whole thing as much, but they would have got the content." He thought that as a facilitator of learning he had to have a way where he did not "split the two (content and skills) but there should be a way in which, there is a way I am sure, in which more content can be done."

7.7.3.2. Self-learning from practice

Mack constructed his practice theory of facilitating learning from the many experiences that he had during this second school-based session. Examples of this constructed practice theory are presented. From his experience of facilitating learning Mack stated that he did not know "what was expected of us [me] in the curriculum… we [I] discovered this at schools." He stated that he had "learnt a lot about, day-to-day 'teaching' and working with people in a school … like having notes prepared on time so they can be photocopied for your class, having tests done in advance" at the school. He also learnt a lot "about how to and what the importance of one [learning] task is, and how to make that a real life sort of learning task that is going to be relevant to the learners and to be able to give them positive influence in their own lives." As a result of facilitating learning he was aware that he had "not been managing my time properly". He was aware of the action that he needed to take to organise his time "so, if I just keep day to day up to date with that stuff, it makes it easier." Mack was also aware that his "practice theory informed my relationship with the learners … and my character and my beliefs influence[d] my relationship with the learners." He thought that "when you sort of operationalising a task or anything in the

class, you need to, to a certain extent, have a formal relationship with your learners." He described this formal relationship as "they [the learners] need to respect you and when you need to say something they need to listen to you" and this he thought would influence the way he treated them. From his experience of standing up in front of the classroom, he realised "somehow that you need to enforce the structure into the class. Otherwise, you will not just get anywhere with your groups [learners]."

Mack was aware that the context of the school played a role in his construction of his practice theory. He said that "I also learnt a lot of obtaining information and where to find resources to use, and what resources I can use." Mack's was also aware that "as a facilitator one of my important roles is to assess. I say important because I feel that this can quite frankly make or break a learner." He understood that "good assessment rubrics – peer, group and individual can be used to assess learners" and that learners should be "presented with the criteria with which they will be assessed before they execute the learning task."

Since Mack wanted the learners to develop the truth, he felt that he should be working more with the content so that he could reach "each of the learners "in his class. He did not want the learners to think "different things about the content" so he wanted to teach it to them.

7.7.3.3. Encouraging, open classroom, ideas and decisions

Mack described his mentor teacher as "[1]lekker" because she was "encouraging and she opened her classroom up …she really allowed me to do what I liked… and she gave me

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[1] Lekker is an Afrikaans word that means nice in English

ideas of where to get resources for the sections that I was facilitating." Even though he thought that the mentor teacher could have given him a more structured list of what "needs to be covered" in Biology for the term, he reflected that it was a "good thing that I had to work it out myself. I could see how long it takes to work out each section." He also stated that he had "used a lot of what she showed me" and "she left it open for me to use or not use what she showed me – if I wanted to use it, I did, if not that was okay."

7.7.3.4. Encouragement and paradigms

Mack thought that he had not received much support from the specialisation lecturer. Mack thought that Professor Ned had "very rigid views on the whole thing [facilitating learning], if you not doing it like that then it is wrong." Mack felt strongly that Professor Ned had not recognised and encouraged him with what he had done, "I understand that it is crucial to get constructive criticism - find out what you did badly in the lesson and I think it is also just as crucial, the opposite of doing that, to find out what you were doing right". In short Mack thought that Professor Ned was not doing what he expected and had told the student teachers to do, "one of his points of facilitating learning is to encourage your students." Mack was very unhappy about the relationship and the expectations from Professor Ned, hence the claim to "not much" support. Mack did admit though that "Professor did clarify a number of things for me, which I think was needed." Mack felt strongly that "you are not going to get any learning done if the student is not going to like what they are doing." Mack felt strongly that "the approach that he [Professor Ned] has to the paradigm that he wants us to work in is not very focused on the content." Because Mack thought that "content still plays a part in education. … I am not sure where that is and I sort of wanted help there [with working with content and process skills]". Mack was disappointed that Professor Ned told him that "I am working in the totally wrong paradigm

and that I must change my thinking to a new paradigm." Mack was really grappling not so much with the amount of content in a lesson but with the move from a transmission style of teaching to a transformative style of facilitating learning.

7.8.   Step 6: Evaluating Action

In evaluating the action I read each student teacher's case with regard to the observation of the teacher mentor at the second school, understanding of the level (standard) of work for learners and the context of the school, and understanding of his/her progress I then compared these responses to those that the student teachers presented in step 4 and 5. I then analysed and assessed the intervention on the basis of each student teacher's reflections about their construction and use of his/her practice theory of facilitating learning and for facilitating learning. The analyses and evaluation of the intervention is presented below.

This step focused on evaluating the action (intervention) of this cycle. Since this is the last cycle the section what feeds into the next cycle is not included.

The student teachers' construction and use of their practice theory during this cycle is evaluated on

a. their response to the challenge to their practice theory during the observation week at the school;

b. their response to the challenge to their practice theory during the school-based learning period and

c. each student teacher's practice theory through the presentation of a Professional Portfolio during a Portfolio Defense session at the end of the programme.

7.8.1. Themes

7.8.1.1. Learners should be challenged and it is the role of a facilitator of learning to do this

The experiential reflections that the student teachers shared at the beginning of this cycle revealed their perception of teaching and learning and the role of a facilitator of learning. Bernice, Carol and Mack's perception of teaching and learning was that learners should be challenged and it was the role of the teacher (facilitator of learning) to challenge the learners. Bernice, Carol and Mack thought that learners do very little because the teachers "only gave them a little work" (Carol) and "expect too little from the learners" (Mack) as they perceive the learners as "not capable" (Bernice). Their perception was that facilitators of learning should demand and expect more from learners. Mack had first-hand experience of this at his second school. He realised that there was a different work ethic at this school where "a lot is expected of the kids and therefore they perform." Carol and Bernice on the other hand were aware that teaching and learning across different school contexts were such that learners were "fed everything" (Bernice). Overall, the student teachers believed that learners could and should do more during the learning process given the support and opportunity to do so by the 'teachers'.

From their immersed concrete experiences the student teachers could project the role that they would play in the classroom. Bernice described how she would need to boost the "learners' confidence" to get them to work while Mack thought that what a 'teacher' expected of learners "could never be too high but you had to be careful not to go over the heads of learners". Carol, as a result of working with the learners and the learning tasks, was aware that she expected too much from the learners. She said that her understanding about what to expect from learners "would have to come from experience and a talk to my

mentor". The student teachers were developing as critical thinkers by being engaged in an active process of reflective analysis and projected action.

7.8.1.2. *Reflecting reveals improvement, develops knowledge and skill of reflecting*

The student teachers were expected to work at a metacognitive level when reflecting on their progress at the beginning of the second school-based learning period. They did this when they specifically identified and described where, what and how they had improved and what they needed to improve on. Mack realised that "there is still a lot that I can improve on", while Bernice thought that her progress in assessment was "much better because my first assessment stuff was kind of don't know how to, where to". Carol was aware that her organisation skills were better than before and she also knew how to improve them. Carol during the first school-based learning period had seen the consequences of her organisational skills. Her perception therefore about what she could do to "see how the facilitation of learning could happen better" informed her practice of what she was going to do. Mack as a result of reflecting on his learning experience was aware that he "felt a lot of stress due to his slow pace" and these feelings served to support his knowledge construction. Mack was aware that he had more to learn.

The requirement for student teachers to reflect on their learning was a crucial eye-opening experience for them. Their reflections now focused on descriptions of what they had experienced and more significantly on the intense emotions that they had experienced. These reflections also focused on a constructive component where each student teacher had a vision for what they could change and how this would impact on the learners' learning experience. Bernice's reflection on her learning task was "As I engaged with this learning task I was able to distinguish quite effectively between meta-cognition and

thereafter co-operative learning. … Successful management of meta-cognition followed by co-operative learning ensures the acquisition of appropriate life skills".

7.8.1.3. Student teachers' construction of practice theory

Bernice Carol and Mack designed learning tasks according to the learning task requirements as suggested by their PGCE Guide. It was the challenge and demands of designing the learning tasks and not just the experience of doing this that impacted on the student teachers' construction of their practice theory. Planning these learning tasks demanded effort as described by Bernice "to read up on the topic and prepare carefully" and then the "thinking and initiating ideas". Bernice and Mack experienced challenges with generating ideas for the learning task (activities) while Carol's challenge was with designing "meta-learning questions." Mack particularly experienced challenges with designing practical investigation activities due to his intense belief that content (lots of it) must be worked with in a lesson. Bernice described her designing as "you start thinking when I plan it this way will this get learners to work with it, will it interest so and so, the clever ones as well." Bernice, Carol and Mack experienced challenges with insufficient time to design the learning tasks especially when you have last minute great ideas as in Bernice's case. These are the challenges that the student teachers shared, which are not necessarily the full complement of challenges that they experienced when they designed the learning tasks. Carol had realised and believed that the positive impacts on how she designed her learning tasks came from her own 'acting', "comparing learning tasks and ideas with your fellow students" and also from using her "practice theory". The student teachers' understanding of a learning task is in Mack's words: "a real life sort of learning task that is going to be relevant to the learners and to be able to give them positive influence in their own lives". They were also aware that the challenges, role, social

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interaction, effort, and attitude that they experienced and responded to, were essential for the way in which they designed the learning task.

Bernice's use of meta-cognitive questions in operationalising her learning task resulted in positive outcomes - the learners enjoyed it and were actively participating, she gained confidence, constructed knowledge and developed skills to manage co-operative learning. Carol's positive outcomes when she presented a learning task that she re-designed – the meta-learning was the best, learners enjoyed it and she was relaxed and confident. Mack's positive outcome was a "total mind set change of the outcomes that I can expect from the learners", his enjoyment of interacting with the learners and his awareness of his development. Mack though was uncomfortable and dissatisfied with his use of problem-based learning in that he wanted to use rote learning where the learners and him could work with more content.

The assessment of the leaning tasks by the student teacher himself/herself, their peers, teacher mentor, specialist lecturer and researcher where possible served to validate assessment comments and provide constructive criticism and suggestions for the student teachers to use. This is evident in the following where in assessing herself Carol stated that she needed to "work with the meta-learning questions" and Mack was aware that his major weaknesses were "non-verbal communication, discipline and consolidation".

Carol realised and believed that it was not just from her own 'acting' but also from getting "criticism and any assessment" especially from "the learners' assessment of me I gained a lot of knowledge of myself as facilitator." She also thought that "every facilitator must be evaluated by his of her learners. It keeps you on your toes and informed about the standard

and quality of facilitating learning". Learner assessment was viewed as valuable and should be included in the assessment of the student teachers' facilitation of learning.

7.8.1.4. Mentor teachers varied in their contribution to the student teachers' construction of their practice theory

While Bernice and Carol stated that their mentor teachers had not supported them they had different reasons for stating this. Bernice thought that her mentor teacher provided support in the form of direct positive feedback and indirect positive learning, in that Bernice "learnt how not to behave with the learners". Carol's mentor teacher expected her to 'teach'. She also had indirect positive learning in that she challenged his suggestion to teach by facilitating and using group work with in her words the "learners learnt more". Mack had a different experience with his teacher mentor. She was supportive and encouraging.

7.8.1.5. During the specialisation sessions

The student teachers, in a social setting, constructed their practice theory by questioning their practice, identifying their problem areas and deciding on the action that they could take to facilitate learning effectively. Bernice came to realise her weaknesses with facilitating learning on her own and in communication with the group. As Carol was experiencing problems with meta-learning questions she used this opportunity to ask "what is the best way to ask questions". Mack became aware of his weaknesses with facilitating learning and what he could do to overcome them. This freedom to critically analyse and share ideas that could enhance the facilitation of learning, during the viewing of the student teachers' videos is a necessary requirement for these sessions.

The specialisation sessions were in Bernice's such that "one of us would throw ideas and another would get ideas". This idea sharing was a necessary springboard for the students to further construct their practice theory or phronesis of facilitating learning and engendering feelings of support and enjoyment. The nature and design of these specialisation sessions was commented on by Carol when she said "every session you do different things and you learn." What is significant is that these different things were linked to the different features of facilitating learning that the student teachers had experienced. "You learn" are powerful words used for these sessions especially since the discussions were not pre-arranged, not developed from theory but they stemmed from the student teachers' reflections of their concrete experiences in the authentic learning contexts (school) and were integrated with teaching and learning theory. Both Bernice and Carol stated that Professor was very helpful in terms of ideas for Bernice and critique for Carol. But, since Mack was experiencing differences with Professor Ned and he felt uncomfortable with this experience he stated that these specialisation sessions did not contribute to his development but he later said that Professor Ned "did clarify a number of things for me, which I think was needed." The support that student teachers expect is not necessarily the support that will be provided. As this programme is focused on maximizing and fully utilizing human potential the student teachers are challenged even "forced" to make the jump as it was in Mack's case from a transmission to a transformative style of facilitating learning.

The setting and the context of the specialisation sessions was crucial to challenging the student teachers' practice theory and to further construct it to one that was aligned with transformative approaches to facilitating learning. The social interactions and individual introspection with dynamic learning were critical to the student teachers transformation in

their personal and professional identity, their role as facilitators of learning and their practice theories. Critically important during these sessions is the character and professionalism of the teacher educator. He definitely played a major role in the student teachers' transformation. He is acutely aware of what it means to facilitate learning for the student teachers to maximise and fully utilise their human potential.

7.8.1.6. Portfolio Defense

This session was a time for the student teachers to reflect on their years experience and to celebrate their development. Their professional development is described in the following sentences. Bernice said "the most amazing thing for me that I learnt is that I can facilitate learners". Carol stated "started off as a teacher and at the end of the year I was a facilitator of learning." Mack stated "I have learnt to be a facilitator of learning rather than just a teacher teaching." For the student teacher to be able to say that they are facilitators of learning started with the beliefs and actions that they had and seeing the consequences of these beliefs in action. Also, assuming the identity of a facilitator of learning was critical for the student teachers to understand and assume the role of a facilitator of learning. Carol referred to herself as a facilitator of learning, while Bernice and Mack referred to being able to facilitate learners. This identity declaration instilled the being of that identity in the person.

The programme also challenged the student teachers to develop personally. Bernice who did not "trust people easily … [and who] would rather be alone than amongst other people" learnt to "work with different people with different personalities." Carol stated that she had developed her "self-image immensely" and she "gained the confidence"

And she concluded that "now I have become a stronger person, I have grown up in the class." She had identified her weakness as a scared person that she did not now "want to be". Mack saw himself as out of his "comfort zone and I am not dependent.

7.9 Conclusion

Analysis of the student teachers' practice theory regarding their preparation to facilitate learning in practice and regarding their facilitating learning in practice produced a number of themes. These themes describe the dimensions of how the student teachers constructed their practice theory and how they used the contribution of the mentor teacher and the specialization programme to enhance their construction of their practice theory. Evidence was presented to support the themes developed. In the next chapter the conclusions and discussion, recommendations and suggestions for further research will be presented.

CHAPTER EIGHT

SYNTHESIS, THESIS, IMPLICATIONS, RECOMMENDATIONS AND CONCLUSION

8.1.   Introduction

In the preceding chapters a challenge and a possible solution to the following question was presented. The question posed: What should the focus of the pedagogic content knowledge in teacher education be, to improve the quality of teaching and learning in our schools, develop learners to become problem-solvers and risk-takers, in the process of constructing knowledge, and educate them for an unknown and uncertain future? A teacher education focused on phronesis is suggested as a solution for it could prepare student teachers to be flexible individuals who have assuredness of being, are competent and committed professionals. These professionals could be the ones to improve the quality of teaching and learning, and prepare learners for an unknown future. I am aware of various teacher education programmes that develop student teachers professionally; however, in my study I worked with a contemporary, radically innovative one year Post Graduate Certificate in Education (PGCE), based at the University of Pretoria. I use the findings presented in the preceding chapters, to reveal how student teachers constructed and used phronesis (practice theory) to enhance their professional development. This construction of a practice theory of, and for not teaching, but facilitating learning, proposes a new paradigm for student teacher professional development.

In the present context of South African education, the improvement in schooling will depend on how student teachers are professionally developed, not to teach, but to facilitate learning. Due to inadequate schooling, many learners may be denied access to the modern world, and from developing as empowered individuals for a world of uncertainty. Poor results in literacy and dysfunctional schools, for example, are clear evidence inadequate schooling. A prime reason, discussed in chapters one and two, for this, is the poor quality of teaching and the impact that this has had on the quality of learning that learners experience. The implementation of policy initiatives by the Departments of Education, to address this issue, has proved unsuccessful. It has not brought about change and improvement in the quality of schooling. Evidence of this, is in the poor learner performance in both international and national studies, presented and discussed in chapter one. An improvement in schooling can only be made possible, once there is visible improvement, in the quality of teaching and learning in schools. Furthermore, if we are to improve the quality of teaching and learning in South African schools, we need to address the quality of teacher education that student teachers receive as part of their professional development. It is on this basis that I present an argument for focusing on the professional development of student teachers as facilitators of learning where they construct and use a phronesis of, and for, facilitating learning.

The provision of such knowledge to facilitate quality education is possible if teacher education focuses on changing the student teachers' paradigms of thinking and action about education. The age-old "technical-rationality approach" (Schon, 1983, p. 21) to teacher education, where teacher educators make simplistic choices of educational theories to be transmitted to student teachers who then have to apply these in practice, is

a reason for the lack of improvements in the quality of teaching and learning. These improvements could be effected, if in student teacher professional development there is a shift from the assumption that children have to be taught in order to know, to one that they have to "be facilitated to develop their unique potential" (Holdstock, 1987, p. 49). This focuses ultimately, on a shift from the teacher who transmits knowledge, to a facilitator of learning who facilitates learning. Facilitating learning, as previously stated, requires the construction of phronesis.

Aristotle (350 BCE) used the term phronesis to focus on an individual knowing what is "good for human beings in general and will have the ability to apply such knowledge to particular situations" (*Nichomachean Ethics*, VI 5, 1140B. p. 6) (in Ross, 1980). This meaning incorporates the action that an individual undertakes and the decisions made to solve a problem in a particular situation. This focus on the good and the capacity to solve problems suggest a duality of reason and emotion. It is through the action of solving a problem furthermore, that changes to behaviour and development of individuals takes place (Roca, 2007).

As chapters four, five, six and seven show these changes are observed in this research in the student teachers' development as professionals. The term phronesis, for example, is replaced in chapter four by the term practice theory. As shown in chapter two, practice theory is derived from the Aristotelian use of phronesis with its focus on particulars and the action for common good. It focuses on particular practice, reflection on such practice, social learning of the practice of learning, and the inclusion of existing theories of education (Korthagen, 2005, Slabbert, 2007). During the professional development programme, each student teacher was expected to construct their own

practice theory. In this context, the role of the student teacher is that of a facilitator of learning who "generate[s] knowledge [during] the process of facilitating learning (Slabbert, 2007, p. 22). This represents a practice theory of, and for not teaching, but facilitating learning.

It is thus for this reason that the primary research question in this study is: *how do student teachers construct and use phronesis to enhance their professional development?* This research question was explored in chapters four, five, six and seven by addressing the sub-questions: (a) what is the student teachers' baseline phronesis when they enter the programme? (b) how do student teachers utilise the contribution of the mentor teacher to construct and use their phronesis to enhance their professional development? (c) how do student teachers utilise the contribution of the specialisation programme to construct and use phronesis to enhance their professional development?

With regard to these questions, the findings were presented in four case study participatory action research cycles. The findings in cycle one, as discussed in chapter four, for example, were concerned with student teachers' baseline phronesis of the role of a Biology teacher[1] and their responses to the challenges of their baseline phronesis. The findings in cycle two, as discussed in chapter five, were concerned with establishing the student teachers' phronesis (practice theory), in the paradigm of facilitating learning in the Life Sciences and the challenge to each student teacher's practice theory against the professional dimensions of facilitating learning in the Life Sciences. The findings of cycle three and four, as discussed in chapters six and seven, are concerned with establishing each student teacher's practice theory regarding their

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[1] The term teacher is used when discussing data from cycle one of the study. This term is later replaced by facilitator of learning in cycles two, three and four.

preparation to facilitate learning in practice and facilitating learning in practice. Further findings have to do with the assessment of each student teacher's practice theory through the presentation of a Professional Portfolio during a Portfolio Defense Presentation.

In this chapter, the findings from the action research cycles are brought together to provide the synthesis, for this study. The thesis for this study is drawn from the synthesis of the data. Furthermore, the implications of this study for student teacher professional development are discussed and suggestions for further research are made. Finally, a conclusion is presented.

8.2. Discussion

The themes that emerged from each action research cycle, as discussed in chapters four, five, six and seven were matched within and across the cycles to respond to the research questions outlined on the previous page. These responses are concerned with the student teachers' baseline phronesis, how they utilised the contribution of the mentor teacher, and the specialisation programme to construct and use phronesis to enhance their professional development. The responses are presented in this section.

8.2.1. Student teachers' baseline phronesis

Exploring student teachers' experiences, assumptions, and beliefs about teaching and learning on entry to the teacher education programme is supported in the literature by,

amongst others, Feiman-Nemser and Remillard (1996), and Leavy, Mc Sorley and Bote (2007). In this study, an exploration of the student teachers' baseline phronesis revealed their perceptions, beliefs and emotions about teaching and learning Life Sciences, their reasons for wanting to teach, their expectations of the teacher professional development module, their concerns about teacher constraints and the possible actions that they could carry out, and their visions for the type of Life Sciences teacher they wanted to become.

8.2.1.1. Developing learners' appreciation

The student teachers' perceptions and beliefs about their role in teaching and learning Life Sciences focused on "developing appreciation in learners." They believed that learners did not possess appreciation and that it therefore had to be developed in them. It was for this reason that they believed the best situation when teaching Life Sciences is for teachers to work with the theory and practical aspects together. Bernice gave an example of what the student teachers could do to develop appreciation in learners. She thought that the learners could be given concrete structures to interact with so that they could "see, it and feel it" (Rooth, 1995). But, in order for the learners to develop appreciation, they would have to in Carol's words: "love and know about and understand and believe" in what they were learning. The student teachers were aware that developing appreciation in learners is not a simple process as it involves the use of concrete objects, developing learners' understanding and beliefs about Life Sciences phenomena. This development required the use of practical investigations by teachers when 'teaching' Life Sciences.

8.2.1.2. Emotions inform commitment and perceptions of the role of a 'teacher' (facilitator of learning)

The student teachers' perceptions of the role of a Life Sciences teacher focused also on their emotion of "passion". Bernice and Mack expressed this feeling of passion for the subject, while for Carol this feeling "borrel(s)" in her. Even though the student teachers' basis for their "passion" differed, its use was concerned with developing learners. For example, Mack "had a passion for nature" which he wanted to develop in the learners and Carol wanted to use the passion that she had to support the learners in their learning. The emotions that the student teachers expressed revealed the relationship between their commitment and perception of their roles as teachers. Within this frame, personal motivation and development (Van Huizen *et al*, 2005) are related to the roles of the student teachers during the initial phase of their professional development as a facilitator of learning.

8.2.1.3. Desire to teach and the experience of teaching

The student teachers' collective reasons for wanting to teach were historical connections, a desire to teach, being taught by excellent teachers, interests in children and people, and an experience of teaching. The common reasons given were a desire to teach, as expressed in Carols' words: "I always thought that I would not mind becoming a teacher" and, the experience of teaching children. These reasons served to boost the student teachers' personal motivation and development for facilitating learning. The student teachers' experience of teaching children served to reveal features of teaching that they enjoyed. This was observed in Bernice's case where she thought that, "small kids are fun" to teach. In Carol's case this experience served to formalise her desire to teach. And in Carol's words: it was the "spuit op die kop" (nail on the head).

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The "aspiration and commitment" (Van Huizen *et al*, 2005, p. 276) to teaching was fuelled by the student teachers' emotions and experiences of teaching. This trend of thinking is evident in the principle of learning and developing from emotional experiences in the Vygotskian theory (Van Huizen *et al*, 2005). The theory though, lacks an explanation for the nature of the teaching experience and the impact of this experience on the student teachers' commitment and aspirations for teaching, and perceptions of their role as teachers.

8.2.1.4. Vision for and of the type of teacher (facilitator of learning)

The student teachers' vision for the type of Life Sciences teacher that they wanted to be was influenced by their personal experiences of being taught during their schooling and tertiary years of education and their own experience of teaching. These visions were linked to the expectations that the student teachers had of the teacher professional development module, their concerns about teacher constraints and the possible actions that they could carry out within particular contexts. For example, Mack was aware that his school peers had hated Biology due to the teacher using traditional methods to teach the subject. His vision therefore, was to be a teacher who made the "work fun" and not boring, so that he could develop appreciation in the learners. Even though he expressed uncertainty about what he was going to learn in the professional development programme, he still expected to learn how to teach Biology "differently", from the transmission style of teaching. Bernice and Carol were also concerned with developing their competence to teach. The student teachers, especially in the case of Carol and Mack wanted to develop their "own style and method" to find "out what works" for them. This willingness to learn with a focus on the action and the self-assessment of this

action is an important criterion in any learning process (Senge, 1990; Mims, 2003; Lombardi, 2007).

8.2.1.5. Awareness of relationship between teacher role and context

The student teachers' baseline phronesis was concerned with their awareness of the relationship between the role of a teacher and the teaching context. The student teachers were aware of specifically, the challenges and constraints that teachers experienced when teaching in particular contexts. This awareness did not serve to frustrate or deter them from becoming teachers. Instead, the student teachers used this awareness in a constructive manner. They did this by deciding on the possible actions that they could carry out, if they were the ones teaching. They also exhibited positive and pro-active thinking. This thinking was crucially important for their emotional development in these initial stages of their professional development (Zeichner, & Tabachnick, 1981; Leavy, *et al*, 2007). The student teachers exhibited their emotions and commitment to learning and developing as future facilitators of learning. They developed a self-awareness of their personal and professional development and this served to strengthen their commitment to becoming a teacher.

8.2.1.6. Rough draft, highly skewed learning task

The student teachers were introduced to learning tasks during the Hammanskraal experience. At this time they were aware that their learning tasks were in Bernice's words: "slightly skewed". This becoming aware was important for their construction of a practice theory of facilitation of learning practice. The understanding and skill of designing learning tasks is crucially important for initiating learning in learners, where they are actively involved in and about the requirements for designing a learning task

(Van Merrienboer & Paas, 2003). It is important therefore that student teachers are knowledgeable about the essential features and principles of a learning task and not just the content of Life Sciences. The student teachers were being challenged to think deeper about learning and teaching in the process off designing the learning tasks. From their experience of developing learning tasks the student teachers were assigning a professional and personal meaning to teaching performance. This aspect is important in the student teachers' construction of phronesis. This learning and development of student teachers is a principle in the Vygotskian theory of learning and development for teacher education.

8.2.1.7. Personal and professional attributes

The student teachers' vision for the type of facilitator they wanted to become was related to their personal and professional development. Bernice wanted to become a Life Sciences teacher who was interesting and passionate. Carol and Mack waned to be the "best teacher" for the learners and they were aware that that needed to develop, to become this type of 'teacher'. Mack and Carol also expressed their emotions and the need to develop a professional identity (Leavy *et al*, 2007). These visions reflected competence criteria, commitment to facilitating learning, emotional and contextual aspects that the student teachers were aware of.

These student teacher visions are linked to the principles of "orientation toward ideal forms" and "learning from emotional experiences" (Van Huizen *et al*, 2005, p. 274-275). The contextual aspect though, features in the "assigning meaning" (Van Huizen *et al*, 2005, p. 275) principle. Clearly, the Vygotskian principles for learning and development are not discrete entities. Instead, they are cross-connected and intertwined.

In constructing a vision for type of teacher, student teachers are moving between the principles, mentioned above, in a 'back-and-forth' fashion. I describe this as a cross-connected manner. Furthermore, within each principle there are many features that are intertwined. For example, "ideal forms" (Van Huizen *et al*, 2005, p. 274) are not constant, independent of individuals' personality, emotion, meaning development, and context. They are changeable, dependent on personality, emotion, understanding and internal and external motivational forces (Coffey, 2001). This suggests that all these are intertwined and interconnected. The theory does not focus on the forms in this way. In fact, what it does suggest is that there is "continuity between the development of a personal and a professional identity" (Van Huizen *et al*, 2005, p. 273).

In summary, the student teachers' baseline phronesis was concerned with cross-connected and intertwined emotional, social, psychological (motivational), perceptual and cognitive features. Their baseline phronesis was concerned with developing learners' appreciation by using integrated practical and theoretical Life Sciences activities. It was also concerned with the interconnections between their desire to teach, the practice of teaching and how these influenced their commitment to teaching. All three student teachers' baseline phronesis incorporated both professional and personal aspects, which informed and enhanced each other.

8.2.2. Contribution of the mentor teacher

The contribution of the mentor teachers to the student teachers' construction and use of phronesis was explored in cycles one, two, three and four. The integrated themes that developed from these cycles are presented below.

8.2.2.1. Developing an internal need – personal to professional

The contribution of the mentor teacher was evident in cycle one, step 4 where the student teachers observed a mentor teacher teaching Life Sciences during their school observation period. This experience evoked emotions in the student teachers, challenged them to think about their role as a teacher (now called a facilitator of learning), and the further action they could carry out if they were effective facilitators of learning. Bernice, on hearing the mentor teacher say that the class was "impossible" felt more determined to "start teaching, to prove them wrong" and she also wanted to in her words: "see if I can do it". Mack also felt "motivated to go out and teach." Carol focused on the context and the constraints that the mentor teacher experienced. These thoughts, feelings and actions are evidence of the student teachers developing an internal need which will direct their effective professional learning (Korthagen, 2001b). A further example of a student teacher developing an internal need is when Carol was observing her mentor teaching and she "suddenly realised that there were maybe two learners in the class that were listening to the teacher in front". She described this experience as "I had the AHA feeling for the first time." It was at this point that her beliefs about the new paradigm were moving to an acceptance level as she "realised that this new paradigm in education is not absurd as I thought." This type of thinking and acting is described in the literature as that which could possibly lead the student teachers to developing a need for change and learning (Zull, 2002).

The mentor teacher indirectly contributed to the student teachers' construction of this need and provided the context for the student teachers' experiential learning (Zeichner, 1990). In essence, the mentor teacher indirectly contributed to the personal and professional development of the student teachers. This connection between the development of a personal and professional identity is evident in the theory framing and supporting this study, in terms of the development of a professional identity that "underlies and directs" (Van Huizen *et al*, 2005, p. 275) the development of professional knowledge and skills. What is clear from the student evidence in cycle one is that their personal aspects override their professional as the focus is on them and how they need to develop as individuals and as professional; it is not an outward projection of rating their development against a list of criteria for an effective teacher (facilitator of learning).

8.2.2.2. Thinking and action for effective practice and developing criteria for effective teaching (facilitating learning practice)

The claim that mentor teachers indirectly contributed to the student teachers' professional learning is supported and extended by the evidence from cycles three and four. In cycle three, step 1, the purpose of the student teachers critiquing the mentor teachers' teaching served to generate ideas for effective practice for the student teachers. Bernice had assessed her mentor teacher in the class as performing a "feeding the learners with stuff" role. At this stage in her professional development Bernice was aware that the learners had to construct knowledge for themselves and that the teaching methods employed by the mentor teacher were not developing learners. When Carol observed the mentor teacher teaching, she questioned and challenged her own competence about what she did and what she was capable of in facilitating learning.

Carol though did conclude that "I know for sure that the learners in my class achieved more than those that were sitting and listening in her mentor teacher's class. Bernice, Carol and Mack had assessed the learning experiences of learners and they decided that they needed to make it an enjoyable one for the learners.

In cycle four the student teachers extended their constructed meaning of the role of an effective facilitator of learning. This was informed from observing and comparing the teaching competence of the first and second school-based mentor teachers. The student teachers constructed a list that they could use to rate a teacher as effective and in this way they were constructing and challenging their practice theory of facilitating learning. Bernice constructed and used the criteria of teaching approach and management of discipline, and Mack used the criterion of time management. Bernice used these criteria to make judgements about the mentor teacher's impact on the learners and in Bernice's words: she was "spoiling the learners".

8.2.2.3. Teacher- learner relationships

The mentor teacher also made contributions to the student teachers' understanding of teacher-learner relationships and the work ethic of learners within particular contexts. Since Carol in her baseline phronesis was concerned with the type of relationship that she needed to have with her learners, she observed that even though her mentor teacher did not know how to discipline the learners, she cared for them. The mentor teachers' lack of disciplining the learners served to challenge Carol's thinking about learners' behaviour and her ideas about how she could discipline them. Carol viewed the learners as "not that bad" and she decided that she would have to handle them "opposite" to how the teacher handles them. She stated that she "will be very strict."

Bernice thought that a teacher's personality was important when interacting with the learners while teaching. She observed that many teachers "did not have an open experience" with the learners, due to them being "totally stuck up and boring". She decided that she would be "relaxed and herself with the learners". This necessity for a student teacher being himself/herself when teaching, challenges the thinking that he/she develops to an externally developed "ideal form" (Van Huizen *et al*, 2005) for 'teachers'. The personal (private) features that a student teacher constructs for a facilitator of learning are the "ideal form" (Van Huizen *et al*, 2005) for that student teacher. This ideal image is not static; it is evolving and linked to the personality, meaning development and experiences of the student teachers. Bernice was constructing her image of facilitator of learning from the way she perceived herself in relation to others (Zirkel, 2000). But, her teacher identity construction was initiated by her observation, judgements and decisions about who and what type of facilitator she wanted to become. Bernice's experience of observing her mentor teacher teaching, highlighted for her the importance of being "a person who is [and she wanted to] … laugh with them [learners]."

8.2.2.4. Teacher work, learner work and context

The student teachers constructed knowledge about the varying levels of work that mentor teachers gave to learners and their perceptions of learner work. From observing different teachers teaching in different contexts, the student teachers evaluated the level of class work and teacher work and drew relationships between them. They observed and concluded that the level of learners' class work was in some cases determined and established by teachers. They concluded that some teachers gave the learners "a little work" and therefore, the learners did "not want to do much work". They further

concluded that some teachers "fed everything" to the learners because they thought that the learners were "not capable". They were aware that in Mack's words: if more is expected of the kids "they perform."

The student teachers also constructed knowledge of the relationship between teacher work ethic and context. Mack during his second practicum session realised that there was a different work ethic at the school, where "a lot is expected of the kids and therefore they perform." These observations and conclusions challenged the student teachers to think about their own actions with regard to learner work, facilitator of learning work and context. Bernice, in her context decided that she would have to "boost the learners' confidence" to get them to want to participate and perform.

8.2.2.5. Feelings, thinking and challenging teacher work and action decisions

The student teachers expressed different feelings about their observations of the mentor teachers teaching. Bernice experienced "fun" and she "felt good" because the mentor teacher was not in the classroom and she was responsible. Carol and Mack did not assume any responsibility in the classroom; they were expected to observe the mentor teacher teaching and to record these observations. They expressed feelings of boredom as there was not much for them to observe and record. This was due to the minimal amount and intensity of work that the teachers presented. In this context, Carol and Mack did not feel challenged and they did not want to only observe. In fact, they were eager to facilitate learning. Carol also expressed feelings of fear. These feelings stemmed from the observation of learners (that she was to facilitate learning with for seven weeks), not listening to the mentor teacher and the "chaos" that took place in the

classroom. Carol used her feeling of fear in a constructive manner, in that she planned and decided on how she could possibly interact with the learners.

8.2.2.6. Support, expectations and self-awareness

The student teachers rated the mentor teachers' support according to particular criteria. Bernice thought that the mentor teacher made a huge contribution to her construction of her practice theory in that she "answers every little question," and supported her "planning of learning tasks". Bernice concluded that this was possible as the mentor teacher had completed the same professional development programme that she was completing. The student teachers' constructed knowledge about the type of support that the mentor teachers could provide and the impact of this support on their construction of phronesis. This is evidenced in Carol's case where her mentor teacher mainly supported her with resource problems. She concluded that even though her mentor teacher had a supportive nature and she felt relaxed with her, her mentor teacher could not impact on her practice theory as she "teaches like a teacher". Mack thought that his mentor teacher was "sort of critical" of his lessons but he valued her constructive suggestions and the spirit in which it was done.

The student teachers had expectations of the mentor teachers' support. When Mack expected his mentor teacher to be present in the classroom and this did not transpire, he realised that this was to his benefit. The absence of the teacher from the classroom gave him "space to learn about things" on his own.

8.2.3. Contribution of the specialisation programme

The contribution of the specialisation programme to the student teachers' construction and use of phronesis was explored in cycles one, two, three and four. The integrated themes that developed from these cycles are presented below.

8.2.3.1. Eliciting, meaning–making and challenging beliefs

The specialisation lecturer played multiple roles during the specialisation sessions. These roles were critical, supportive (van Huizen, *et al,* 2005) and constructive (Claxton, 1999) in enabling student teachers to construct phronesis. Initially in the programme, he elicited the student teachers' baseline phronesis, for them to be aware of their perceptions and beliefs about teaching and learning. This development of awareness was not an instant once-off process for the student teachers. They were engaged in many different awareness creating moments facilitated by the specialisation educator (Stacey, Rice and Langer, 2001). This role of the specialisation lecturer was crucial for facilitating the meaning making (Van Huizen *et al*, 2005) and the construction of knowledge by the student teachers (Von Glaserfeld, 1984). The specialisation lecturer challenged the student teachers' about their perceptions of teaching and learning and this according to Korthagen (2001) is a necessary requirement in any student teacher professional development programme. Furthermore, the role of the specialization lecturer was one where he provided guided support (Van Huizen *et al,* 2005). The principle of guided support is stated in the Vygotskian theory of learning and development but it does not provide an ontological base for role of the teacher educator. It was crucial for the specialisation lecturer to use multiple perspectives, when examining the student teachers' understanding, in order to distinguish relevant from irrelevant information, when constructing phronesis.

8.2.3.2. Exploring feelings and providing support

The specialization lecturer also expected the student teachers to share their feelings about their experiences of designing and operating learning tasks, why they wanted to become teachers and how they felt about wanting to teach even after they observed teachers in action at the schools. The depth of the challenge to their feelings can be seen in the question that he asked in one of the sessions: when he said "you say you have passion, how do you know that you have passion?"

The student teachers expressed feelings with regard to the activities that they did, their intense inner turmoils, awareness of their progress, interactions with one another and with the specialisation lecturer. The student teachers experienced feelings of despair and elation at different times in the programme. Carol in her words: "felt lost, confused and skeptical", when a new experience was given to her. In many instances Carol was the student teacher who experienced the various activities etc., more intensely than the others. Her 'high' and 'low' feelings were indicative of her challenges and her learning and development that she was experiencing. Mack also experienced intense feelings during the programme linked to the nature of support that he had received from the specialisation lecturer. He felt that he had partially achieved certain requirements of the module and was not being recognised for this. A possible explanation for this is that the student teachers and specialisation lecturer did not having a clear connection between the expectations, understandings and the 'action to word' that the lecturer displayed and what the student teachers expected to observe from him. Evidently, an aspect of modelling is expected from student teachers. They, especially in Mack's case wanted to observe the specialisation lecturer "practicing what he advised" about facilitating learning, with them.

The student teachers recognised and appreciated the support that was provided during the specialisation sessions. They were aware, for example, that clarity about the new paradigm was given and they constructed knowledge about the role of a facilitator of learning and facilitation of learning practice during these sessions. Even though Mack at one time in the programme was very unhappy with the specialisation lecturer, he acknowledged the support provided by him. He described this contribution as informing his understanding of designing and operating learning tasks. An example that he gave was when Professor Ned gave advice about learner work ethic in that as a facilitator of learning he needed to "state the urgency about it, it needs to be done now" (Slabbert, 2007).

8.2.3.3. Content, process and participation

The student teachers experienced these sessions as constructing and co-constructing knowledge about facilitating learning and facilitating learning in practice. It was during these sessions that they constructed knowledge about, for example, syntactical and substantive aspects of Life Sciences and became aware that these sessions did not contribute to developing their understanding about the content of Biology. At the beginning of the programme the students were uncertain about what they were going to be taught, and they began to realise that the focus was going to be on Life Sciences facilitation of learning, not the content. The focus of the specialization sessions were such that they enhanced the student teachers' construction of phronesis .They provided a platform for the student teachers to make decisions about how to facilitate learning

The specialisation lecturer used the student teachers' experiences of facilitating learning and their understanding of a facilitator of learning to facilitate the student teachers' construction of further knowledge about facilitating learning (Brown, Collins &

Duguid, 1989). During the sessions he challenged them to think about their understandings in relation to what they observed and originally though about facilitating learning. He also integrated this with the learning of Life Sciences from constructivist theoretical learning principles (Von Glaserfeld, 2001) as depicted in various documents that the student teachers were expected to work with, for example, the Life Sciences Policy document and the study guide that focused on facilitating learning, discussed in cycle two. He did not provide the student teachers with answers instead he got them to question their own responses further. The integration of their constructed knowledge, with theories of learning was crucial for the student teachers' construction of phronesis.

The student teachers' participation during the specialisation sessions served to enhance their understanding of facilitation of learning. This enhancement was made possible by the actions of the student teachers themselves in that in Mack's words: "it was my active participation in the session that was of intense importance." The nature of the student teachers' participation varied in that Carol did not feel free to communicate. She expected the sessions to be "a chat session". Even though Carol felt restricted it was a 'perceived rule' that all the student teachers were expected to participate. The rule was evident in the questioning and probing action style used by the specialisation lecturer. The restriction to participate was a personal one that Carol felt. The preparation for, and the participation of, the student teachers during the specialisation sessions was an important action for them to construct their practice theory.

8.2.3.4. Assigning meaning and identity construction

Student teachers' professional identity was revealed and meaning was assigned to the facilitation of learning through the use of stories, professional portfolios, reflections, drawings, discussions and observing videos of colleagues and themselves facilitating learning. These strategies revealed the personal and professional aspects of the student teachers' perceptions of a facilitator of learning and facilitation of learning practice. An example of a personal professional conflict that was experienced was when Bernice interpreted her visual as herself doing the experiment (cycle two, step 1), and then after some thought she decided that it was the learners doing the experiment (Abbot, 1999). The experience of challenging the student teachers' perceptions of the role of a facilitator of learning was essential to their clarification of what was expected of them and what decisions and actions they needed to take to facilitate learning.

In developing a Professional portfolio the student teachers revealed the tumultuous feelings and learning that they experienced during the programme. Evidence for this was in Bernice's words: "the most amazing thing for me that I learnt is that I can facilitate learners" and Carol's words: "my personal development contributed to my professional development". Clearly, the student teachers' personal development had a major influence on their professional development. Mack stated that his personal progress was a contributory factor to his development as a facilitator of learning. The student teachers were unanimous in their decision that in Carols' words that this development was "through experience".

8.2.3.5. Real-life experiences for phronesis construction

The authentic experiences that the student teachers encountered were intensely dramatic and had major impacts on their personal and professional development. For Carol, these experiences were "totally different" in that "for the first time in her life she was challenged to the maximum" and that this education experience had been different to any other that she had, had in the past. The intensity of this experience begs the need for ongoing development. This impact has an enduring nature. It is not a once-off experience that is soon forgotten. In fact, it is one that will never be "forgotten".

8.2.3.6. Facilitation of learning practice – feelings and progress

The student teachers were expected to design and operate learning tasks during their school based sessions, and these were reflected on during the specialisation sessions. It is for this reason that I position this section of work under the specialisation programme.

In designing the learning tasks the student teachers were affirmed in their construction of their practice theory for facilitating learning. The final product of the learning task once designed, after much emotional and long hours of work, was a truly rewarding sight and experience for the student teachers (Lombardi, 2007). The student teachers' learning task design was influenced by different factors, for example, beliefs about learners' learning, understanding about pedagogical content knowledge, repeating a learning task, relevant and interesting for the learners. The student teachers were at a self-awareness stage of what their knowledge about designing learning tasks was. They used this knowledge to further construct their practice theory. .

In operating the learning tasks the student teachers became aware of their competence to facilitate learning. This self awareness of progress seemed to influence their planning and operation of future learning programmes. They also became aware of the level of learning of the learners and the work ethic of learners. Furthermore, the role and responses of learners during the operation of the learning task served to influence the student teachers of how to design and operate a learning task.

From their assessment of their learning tasks the student teachers' beliefs, perceptions, feelings and knowledge about facilitating learning and designing and operating learning tasks was challenged. This claim is supported by Carol when she said that her development and awareness of her progress came "not just from her own 'acting' but also from "comparing learning tasks and ideas with your fellow students" and "getting criticism and any assessment". The comparing and assessment of learning tasks also revealed the student teachers weaknesses and progress.

8.2.4. The student teachers' construction and use of phronesis

The meaning of phronesis as conceptualised by Aristotle (in Ross, 1990) focused on the action for the good. This 'action for the good' though, does not capture the essence of modern day life and living and the uncertainty of the future. In these post-modern times where the dynamics of person and place, body and spirit, mind and matter, change and flux are in focus, and are viewed as integrated critical components in the development of individuals, an extended meaning of phronesis was required. Furthermore, this extended meaning embraced the features of professional development. The constructed meaning of phronesis (practical wisdom, practice theory) incorporates the student teachers' perceptions as facilitators of learning, as well as their knowledge, cognitions,

beliefs and actions within the context of facilitating learning in practice. In short,: phronesis, as it is conceptualised in this research, is the individually, self constructed practice theory of facilitating learning to be used to design subsequent facilitating learning practices.

My thesis:

☞ The student teachers' construction of phronesis is their self construction of knowledge of facilitating learning. This knowledge is viewed as essentially perceptual with limited cognitive features.

The student teachers' understanding of facilitator of learning and facilitation of learning practice was informed firstly by reflective discussions on their perceptions, beliefs and actions in this regard. During these reflective sessions the theory of learning Science was discussed and integrated with the student teachers experiences to give them greater meaning. These experiences that the student teachers shared were used as the springboard for the construction of knowledge about the issues shared. The cognitive feature of the discussions was limited to the application of "principles of operating" that student teachers constructed from their experiences. The "principles of operating" were initially constructed by the student teachers in particular contexts and then later used in other contexts. What is significant though is that when the student teachers applied these "principles of operating" to new contexts they underwent a re-construction and re-defining. A general principle is constructed then applied to a particular context where it does not inform the practice; instead the practice informs the theory.

☞ The perceptual knowledge that is constructed is personally, emotionally and socially motivated.

This knowledge construction starts from an internally motivated realisation that each individual has of who they are as people, their beliefs and feelings about facilitating learning and their reasons for wanting to become teachers. A crucially important realisation for each student teacher is that they want to 'teach' (facilitate learning). This internal realisation (Korthagen, 2001) is the beginning of an intense, continuous process of student teachers challenging their beliefs and actions about facilitating learning. This process enhances the construction of knowledge about facilitating learning. Ultimately, this knowledge construction is concerned with them constructing their own theories about facilitating learning. Of crucial importance is that the internal realization is not an automatic process. Student teachers need to experience interventions that challenge their accepted and mundane thinking that teaching and learning is a passive process. Furthermore, student teachers need to be challenged to be critical reviewers of their own experience of being taught at school and their perceptions of current teaching practices. This intervention occurs in the frame of constructing knowledge about what an educator really is (Slabbert, 2003).

The perceptual knowledge constructed is personally, emotionally and socially motivated by within a social setting in different contexts. This knowledge is constructed in group settings structured within the programme and other spontaneous groupings outside the programme. The student teachers shared their emotional (frustration and joy) and organisational aspects of facilitating learning during the specialisation discussion sessions. These emotions were shared freely and openly. Each student

teacher supported his/her peer by expressing how they felt about particular facilitation of learning experiences. This sharing was not an individual but group experience in the presence of the teacher educator. The context of this sharing was within a structured university session.

The student teachers also shared their frustrations of facilitating learning during unstructured open meetings which they arranged. These meetings were driven by the intense frustrations that they were experiencing. At these meetings they talking (in their own words- moaned) about all the bad feelings and frustrations that they were experiencing. These sessions were crucial for the enhancement of each student teacher's personal security and comfort (Van Huizen *et al,* 2007) with regard to being a Facilitator of Learning. It is as if these moaning sessions seemed to re-affirm their perception of who they were as novice Facilitators of Learning and the role that they needed to play in this context. Another aspect of these sessions is that the student teachers became aware of not just their own frustrations and weaknesses but also those of their peers. In so doing for each of the student teachers there was a comfort in knowing that there are others who are experiencing what I am experiencing. This surprisingly was a motivation for the student teachers to persevere and to makes strides in being a Facilitator of Learning.

☞ An important feature of phronesis construction is that it can take place in any context in interaction with others and also in intra-action with oneself.

Phronesis construction took place in different venues, for example, university specialisation discussion sessions, in the school classroom and in the staffroom. Of significance is that this construction of phronesis occurred when the student teachers were in interaction with others. This interaction was with learners, the teacher educator, mentor teachers and peers. The evidence that an interaction with learners promotes phronesis construction is from the statement that Bernice made "you learn from class and the reactions of the class."

Phronesis construction is also promoted by an intra-action. Here, the student teachers were interacting with their own ideas, thoughts, feelings, decisions and judgements that they were making in the process of facilitating learning. The student teachers were constantly questioning and checking their ideas and actions linked to facilitating learning.

☞ The student teachers' phronesis of facilitating learning is self-constructed from their immersion, and not just exposure over an extended period of time, to authentic, problem-based learning, in particular school contexts.

The student teachers spent sixty percent of their professional development time in the school facilitating learning and forty percent of their time at the university. This extended period provided the opportunity for them to learn from their practice (Korthagen, 2001). Facilitators need to be facilitating learning experiences with learners in the school. In this context the facilitators of learning are expected to design and operationalise learning tasks and to reflect on their facilitation of learning. The student teachers use this to construct theory about how to facilitate learning. We need to

recognize the importance of the student teachers experiencing the schooling context to construct an understanding and to develop a baseline practice theory about what he/she would do when they are facilitating Life Sciences.

☞ phronesis construction will only take place if the student teachers' beliefs about teaching and learning are explored, challenged and then changed.

Student teachers had beliefs, at the beginning of the programme, about teachers and the role that they played. These beliefs and perceptions were challenged at the outset of the programme (Feiman-Nemser & Remillard, 1996; Leavy, Mc Sorley & Bote, 2007). Thereafter the student teachers were introduced to a new paradigm – facilitation of and for learning. Here, they were expected to reveal their beliefs and perceptions about a facilitator of learning. The student teachers' beliefs were challenged by the interventions that they experienced. These beliefs were further challenged by their personal and direct experience of facilitating learning in the school classrooms.

Challenging student teacher's beliefs needs to occur on a continuous process where the student teachers are forced to question their role as a facilitator – what would they like it to be and how they see themselves as facilitators of learning. The belief must be a personally generated on that has an emotional and social basis. This could be due to the practice of facilitating learning that the student teachers have already experienced.

☞ The initial intervention after exploring the baseline phronesis

In exploring the baseline phronesis significant techniques, time and setting were crucial for the opportunity for student teachers to be confronted, confused, frustrated and emotionally challenged to develop a sense of who they are as people firstly and who they are as facilitators of learning secondly.

☞ Contribution of the specialisation sessions to the student teachers' construction of phronesis

Student teachers were aware of the contribution of these sessions to their construction of phronesis. But this becoming awareness was not an instant process. It was due to the extended time that the student teachers spent in the school and their understanding of what the facilitation of learning entailed. Also the discussions that the student teachers had with the teacher educator were crucial for their construction of phronesis. These sessions did not contribute to developing the student teacher's understanding about the content of Biology. Instead they focused on how the student teachers were facilitating Life Sciences learning tasks.

☞ During the specialisation discussion sessions the student teachers are expected to reflect on their practice of facilitating learning.

The student teachers are expected to use the experiential reflections that they share to construct and re-construct their practice theory of facilitating learning. This process of reflecting is explored and enabled by the teacher educator during these specialisation discussion sessions. The nature and extent of this exploration and enabling by the

teacher educator is critical for the student teachers elicitation of their reflections and construction of their phronesis.

☞ University specialisation discussion sessions – their structure, timing and sequence, composition (who is present); the nature of the participation and the sharing of reflections where the what, the process and the underlying premises of these are, was critical as well as the role that the teacher educator played to the construction of phronesis. The nature of the role of the teacher educator is crucial – in motivating, stimulating, supportive and re-assuring at the time when student teachers were still beginners in the process. Also initially this role could be seen as having a power dynamic but this was necessary for the development of the session and the expose' of the student teachers' experiential reflections.

☞ Constructing and using phronesis is a process and not an outcome of professional development.

Throughout the programme the student teachers were engaged with constructing "phronesis." This process was evidenced from the elicitation of their beliefs about teaching and learning in cycle 1 through to cycle 4.

☞ We need to recognize the importance of the student teachers experiencing the schooling context to construct an understanding and to develop a baseline practice theory about what he/she would do when they are facilitating Life Sciences.

Student teachers are open and willing to participate in different facilitation of learning experiences; they have the ability to experience and reflect on their experiences

leading to further construction of their phronesis. It is important that the personality of the student teachers is also focused on.

☞ The student teacher activities during the programme – self profile; reflections; designing and implementing learning tasks were critical to their construction and use of phronesis.

During the specialization sessions when the student teachers were asked to reflect at the beginning of the year, they did not understand the full process and the outcome of reflecting. They had basic understandings of what it means to reflect. Encouraging reflection needs to be a conscious effort on the part of the facilitator of learning to do more than just say "reflect on this:" it needs to be a planned activity (Beaudin & Quick, 1995, p. 4). In constructing phronesis, the process of reflecting is a constructive one where, initially, a student teacher is not how to reflect. The process of reflecting is an evolving one and it is enhanced by the individual and group reflection actions that the student teachers are expected to participate in during their specialisation sessions.

☞ Contribution of mentor teachers to the student teacher's construction of their phronesis.

Mentor teachers were responsible for the student teachers facilitation of learning in the school. Student teachers were assigned to mentor teachers. These mentor teachers had attended a mentor workshop at the university where the expectations of mentoring student teachers was discussed. Here, the roles of a mentor teacher were discussed and they were informed about the expectations of the programme. It can be assumed that mentor teachers were aware of the programme expectations and yet, they varied in their support of the student teachers. This support varied from minimal input to supporting

the student teacher extensively. This support was evidenced in the provision of ideas and resources for facilitating particular sections in Life Sciences.

The teacher mentors who contributed extensively to the student teacher's construction of phronesis were those who had attended and completed this particular teacher education programme.

☞ Student teachers' cognitions, beliefs, feelings and actions about the learning task - design and implementation are essential to a positive experience rewarding emotionally. Emotional and social competences are given new meanings in a professional development context.

It is in the act of designing and implementing the learning tasks that the student teachers developed further understanding about the requirements for facilitating learning and the facilitation in learning practice. More importantly their role as facilitators of learning is defined by what they do which is underpinned by what they think and belief. The role of a facilitator of learning was developed over time

☞ The experiential reflection sessions were crucial for the student teachers' construction of phronesis. Equally crucial were the reflections that they made.

If student teacher's experience of facilitating learning in a school classroom is not elaborated on preferably in the light of his/her own and other people's experience and knowledge, then there is good reason to believe that the (practice) new learning constructed into phronesis will be richer if it is not just experienced but also explicitly reflected upon. For this to be achieved the nature of the reflection sessions must be:

- collegial support in eliciting, sharing and developing each and the groups' knowledge, emotional and confidence levels about facilitating learning in the classroom - one could refer to it as a "collegial learning community";
- Co-learners in a supportive and non-threatening context;
- The emotional freedom and confidence to 'act';
- Participation of all individuals during the sessions;
- Exploring and developing their identity as facilitators of learning;
- Exploring and developing their perceptions of facilitating learning.

In experiencing these reflection sessions the student teachers developed not just professionally but also very importantly in a personal capacity as facilitators of learning.

An essential aspect to consider with these reflection sessions is that they should have a collective and not individual focus. Where reflection do not take place in a solitary manner. The student teachers should have a reflective community of practice. In this grouping the student teachers need to adopt and use a collective, reflective dialogical approach. Here groups of student teachers are in dialogue with each other about their reflections.

☞ The student teachers' perception of a facilitator of learning was crucial to their performed role as a facilitator of learning
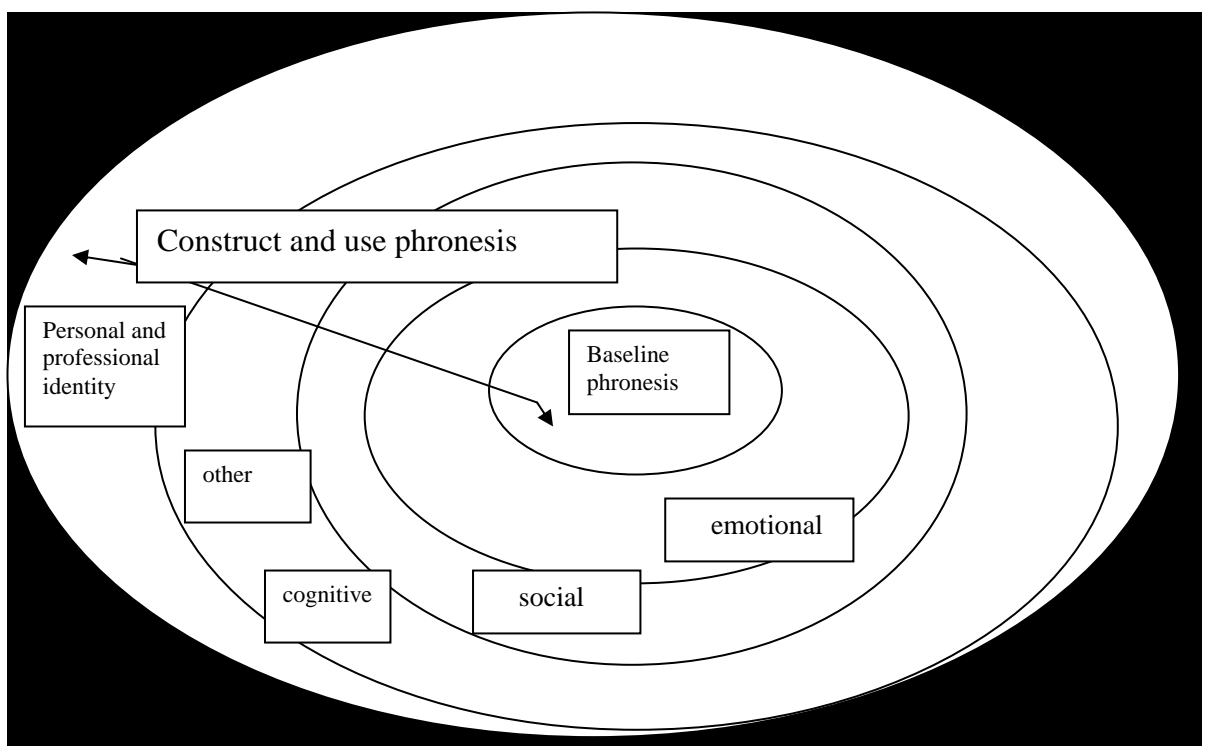
The student teachers' perception of a facilitator of learning was linked to their understanding of it, their experience of it and awareness of their own personalities including their strengths and weaknesses. The identity of how each student teacher sees

himself or herself as a facilitator of learning oscillates with refinement over the different experiences. This view extends the Vygotskian learning and development theory which views this as a static component (Van Huizen *et al,* 2005). In the classroom, when facilitating learning the student teachers are continually challenged to think and make decisions about the appropriate action to take and this enhances the belief change. This (belief change) could not be possible as Korthagen (2001) has indicated that minimal if any change takes place when methods of teaching are taught to beginner educators. However, when student teachers experience and are faced with challenges in facilitating learning, they are forced to question and re-define their beliefs about teaching (Korthagen, 2001). This change may or may not happen depending on the actual experience that student teachers are engaged with.

I present a **model** in Figure 4 below to represent student teachers' development as facilitators of learning.

The model consists of different sized circles positioned in such a way that the inner circles are smaller than the outer circles. The sizes of the circles bear no relation to the

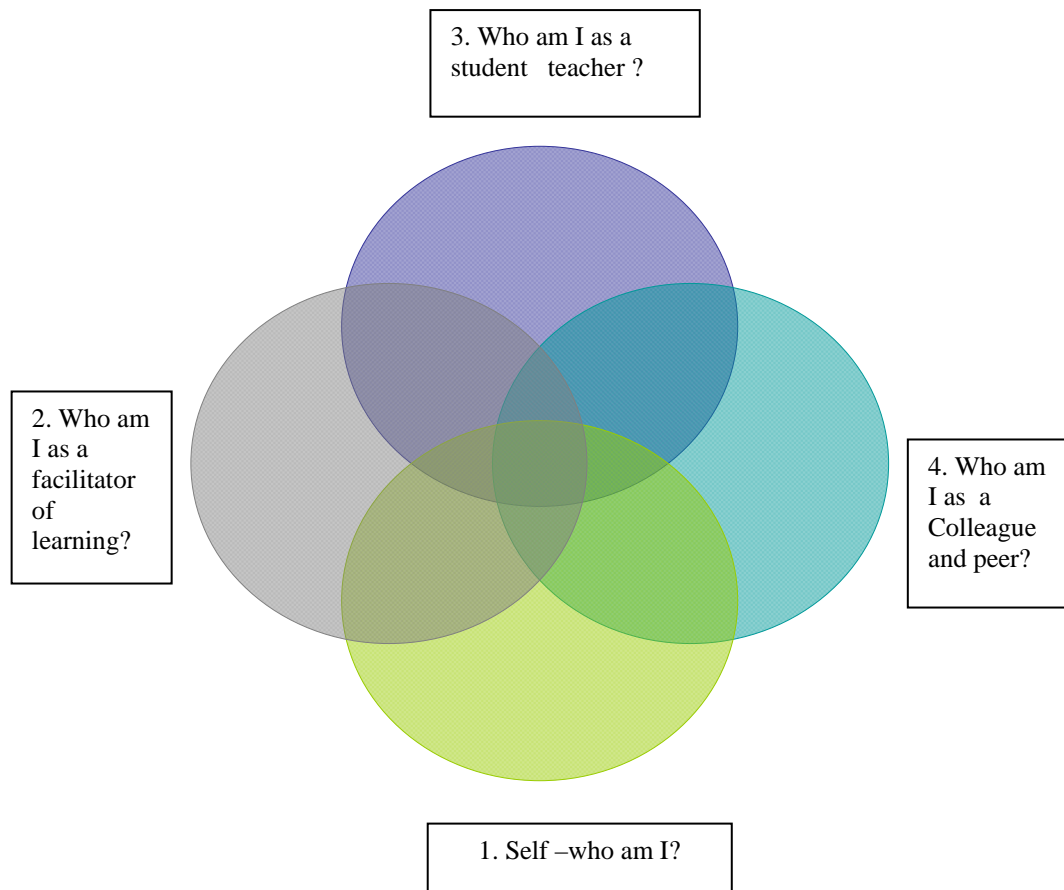Figure 4: Student teachers' development as facilitators of learning.

size or amount of the aspect that occupies it. The inner circle is labeled baseline phronesis. It is the inner circle because this is what the student teachers enter the programme with. It is personal and it is part of their inner core, their thinking and beliefs. The next circle is labeled emotional. The reason for its positioning is that student teachers have extreme emotional experiences during their construction of phronesis. These emotional experiences are closely linked to their beliefs, that is their baseline phronesis. The third circle is labeled social. It is the social interaction that the student teachers experience that support, challenge and enhance their belief orientated paradigm. The act of believing you can do it and then doing it has a powerful positive impact on the student teachers' construction of phronesis, just observing that you can do it. The third circle is labelled social. The social interactions that the student teachers had with various individuals (specialization lecturer, mentor teachers, peers, learners) during the programme supported their construction of phronesis. The fourth circle is labeled cognitive. This is the area where the student teachers used these baseline phronesis, their emotions and the social interactions to make meaning of their experiences. The other in the block could cater for other features that are evident in this development. The last circle is labeled personal and professional identity. This is the ultimate point of development for the student teachers. This development uses all the features discussed to construct a meaning for identity. The personal identity of the student teacher is crucially important for their professional development. I do not view them as two sides of a coin (Van Huizen *et al*, 2005). I view them as totally intertwined. The line drawn across from baseline phronesis to the outer circle indicates the connections and also the development to the point of identity formation.

☞ The construction of the student teacher's identity (professional and personal) during their professional development was essential. This identity construction is represented in the following figure:

Figure 5: Construction of a personal and professional identity

The model in figure 5 above represents the construction of a personal and professional identity that the student teachers experienced.

The components of this identity construction are listed and described below.

1. Who am I (self) involes exploring the self in terms of your personal skills, your self image, temperament and Neethling Brain Instrument;

2. Who am I as Facilitator of Learning is concerned with the student teachers' perceptions, feelings and actions as a Facilitator of Learning;

3. Who am I as a student teacher is concerned with the student teachers' role in the programme as a PGCE student teacher, the expectations of the programme, role in the programme, position in relation to peers and teacher educator and partnership dynamics;

4. Who am I as a colleague or peer is concerned with the supportive, emotional, social and psychological and pedagogical interactions that the student teachers encounter with their peers.

An essential aspect of the student teacher's identity construction is: I for myself (personal development) and with, and for others in my professional development. Any student teacher professional development has the personal and professional development comprising of four different components and these are tightly intergrained. A change in one component will influence a change in another.

8.4. Implications and recommendations

The construction and use of phronesis holds a key to the future of student teacher professional development in South Africa. The implementation of this new paradigm that focuses on the construction of a practice theory of, and for, facilitating learning in student teacher professional development programmes, could improve the quality of learning and teaching in our schools (Morrow, 2007).

This construction and use of phronesis, in a student teacher professional development programme, provides a framework for the development of student teachers as future facilitators of learning. These facilitators of learning should have appropriate content knowledge and skills, "practical, creative wisdom" (Slabbert, 2006, p. 1) and human

qualities that empower their moral character. A teacher would need to cultivate this wisdom to enable him/her to adopt teaching methods through which the potential of all learners could be maximised and fully utilised. Student teachers' development of human qualities, as stated by Gulke (2000) and Barnett (2004), in chapter one, will be essential for them to be prepared for an unknown and uncertain future when they are facilitating learning in the schools. It is therefore necessary, for student teachers during their professional development, to develop assuredness of being and action. Student teachers should be developed to possess the qualities of flexibility, courage, thoughtfulness, resilience, independence and self-reliance. In the multi-varied schooling contexts and changing education systems, possessing these qualities will enable student teachers to facilitate learning effectively. The necessity for this act is observed in the inability of many teachers to respond to change and provide quality teaching within the current education system. These teachers lack appropriate content knowledge, pedagogic content knowledge, an effective work ethic, inflexibility and resistance to change and innovation. Clearly, if these teachers had experienced a professional development programme focused on the construction and use of phronesis, their competence to provide quality teaching, within a changing education system, could possibly have been heightened. The implications of this study for the professional development of student teachers in South Africa raises a number of issues. These issues are discussed below.

8.4.1. Teacher education programmes

Teacher education programmes should focus on the experiences of the student teachers and their personal beliefs and expectations in a programme. The immense personal and professional development was possible because:

- Student teachers were immersed in the contexts and expected and challenged to facilitate learning in different contexts.

- The student teachers' baseline phronesis was elicited, explored and they became aware of who they were as persons, their role as a facilitator of learning and what the process of facilitating learning entailed was being constructed by them.

- The time allocated to facilitation of learning experiences in the particular contexts was extensive – sixty percent of the teacher education programme. This was an essential component as it was during these periods that the student teachers questioned, planned and acted on their perceptions, beliefs about facilitation of learning practice; the role of learners and their role in the facilitation process.

- The social learning dynamics which operated during the specialization discussion sessions and reflection sessions with the teacher educator and the moaning discussion sessions which took place among the three student teachers were self-affirming and emotionally supportive.

- Student teachers observed experiences of teachers teaching; themselves facilitating; discussions about facilitation and they were expected to reflect on these. Of significance is that these reflections were an essential aspect of their personal and professional learning.

- Student teachers spent extended periods (16 weeks, two sessions of eight continuous weeks and other school observation visits at the beginning of the year) at a school. An extended school-based period is desirable.

- Sessions for specialization discussion periods with reflections soon afterwards are crucial for the construction of the individual needs and understandings of
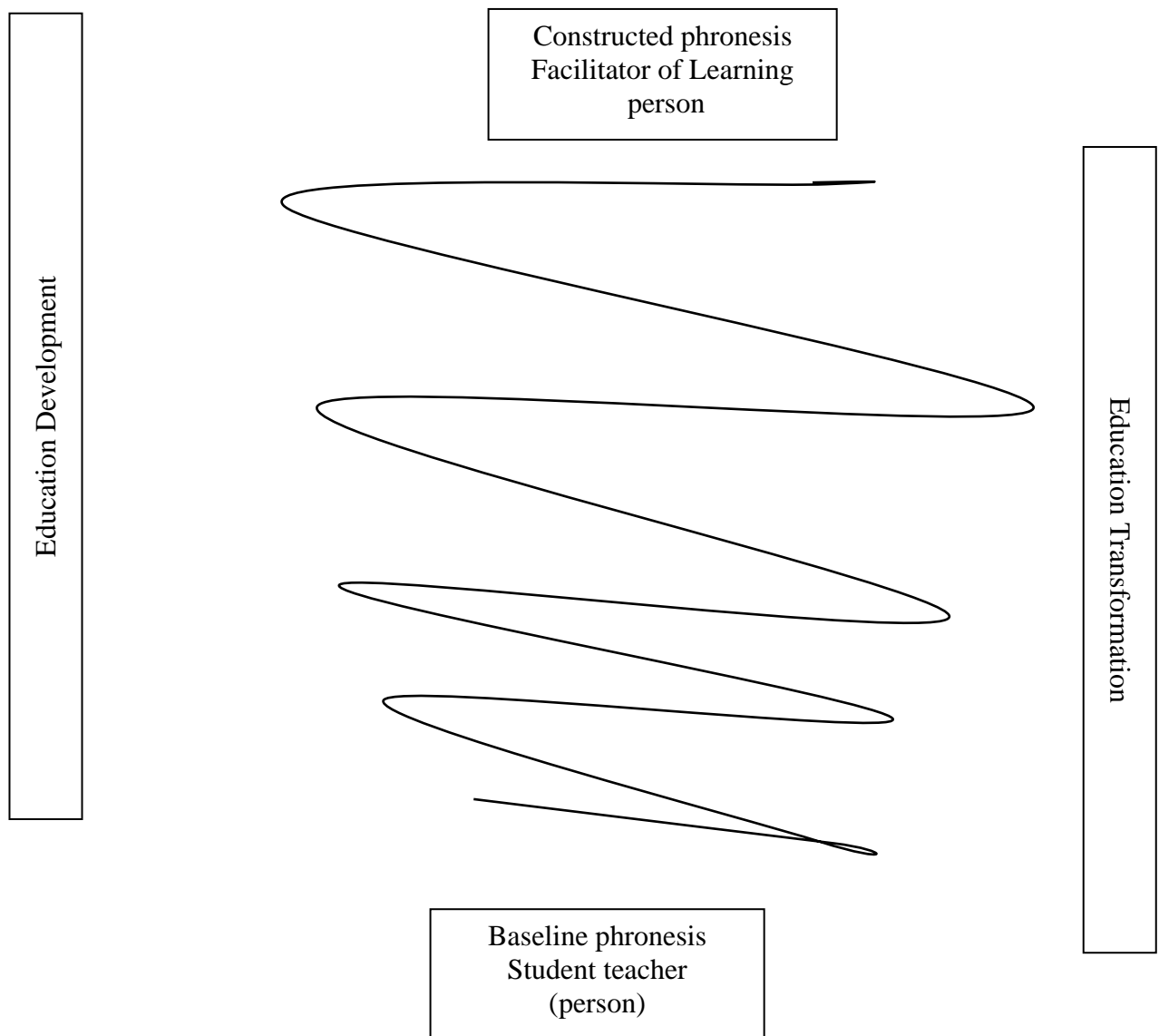
student teachers and the development of knowledge and the social dynamics that take place during learning.

- Social moaning sessions where student teachers meet to share and discuss their concerns should be included in the programme. Student should be alerted to the inclusion of these sessions in that the teacher educator could share the experiences of the student teachers from this project and discuss the need for the sessions. What is crucial is that the student teachers themselves, would have to decide on where and when in the programme the sessions would occur (happen) and they should be expected to reflect on these sessions.

- The university specialization sessions should focus on providing student teachers with experiences (observing teachers teach) and elicit the student teachers' experiences of this. The discussion starts with what the student teachers, think, feel and know. Student teachers should be challenged to make suggestions on how they would facilitate learning in comparison to what is observed from the mentor teacher teaching. These discussions can then focus on integrating learning theory to support justifications for decisions and actions for facilitating learning.

- The construction of an understanding of reflections by reflecting is an essential action learning component. Inherent in this process is the development of each student teacher's framing and inclusion of detail in reflections. The inclusion in the programme on a discussion of what student teacher mean by reflections and how they reflect using their actual reflections is important for them to construct a more in depth and a meta-analytical understanding of how to develop and use their own reflections in a teacher education programme.

- The emphasis on the use of concept maps to explore the student teachers' understanding of practice theory is a crucial component. Student teachers while constructing their concept maps are critically analyzing and structuring and questioning their experiences. More than this the student teachers would be expected to compare their concept maps with what they originally started off with so that they themselves can understand and learn what their practice theory was and how it developed.

- All student teachers entering a teacher education programme should be orientated to teaching. This orientation should focus on the knowledge, skills, values and attitudes of student teachers to teaching. But, more importantly it should focus on the student teachers' exploration of their emotional, psychological, personality and perceptual aspects in revealing to them who they are as individuals firstly and as facilitators of learning secondly. This exploration is crucial for student teachers to meaningfully make decisions about their essential role as teachers in the changing times.

- The teacher educators' personality, knowledge about phronesis and focus and understanding of the role of the student teacher in the teacher education is a crucial component for the successful implementation of phronesis in any teacher education programme. Not any teacher educator would be able to work with phronesis in a teacher education programme. Professional development of teacher educators would be a major requirement as many still work in the realm of "technical-rationalist approach (Schon, 1986) and a one size fits all lesson approach. Teacher educators need to be exposed and experience their own development of their practice theory for them to see and change from their teaching frameworks.

A model that every teacher education programme should be developed upon is:

Figure 6: Model for a Teacher Education programme

In this model student teachers enter the teacher education programme as novice student teachers. They enter the programme with their beliefs and perceptions of teaching. In most instances these beliefs will fall within the Education development frame which is indicated by the column to the left of the figure. The teaching approach used in this frame would be that of a traditionalist one. As the students experience the interventions

in the programme they move upwards in a looping pattern towards the Education transformation frame. These movements continue throughout the programme. They indicate the growth of student teachers in the programme. What also happens is that the loop widens sideways. This indicates the student teachers' ability to start moving and working towards the transformation frame. This movement is due to student teachers' original beliefs and actions which change. The changes are small and limited at first and then they are broadened and are extensive. At this point at the top of the wave the student teacher is now a person of being, a facilitator of learning.

This model indicates the evolving nature constructing phronesis and the pressures of working in situations where the Developmental frame is present and the student teacher is expected to work within a Transformative frame.

8.5. Suggestions for future research

This study provides useful guidelines for teacher professional development programmes and the professional development of student teachers. It also paves the way for further research on a comparative study of student teachers' professional development programmes of different universities. Further research could be a comparative study of student teachers' professional development in different professional development programmes. A longitudinal study of novice facilitators of learnings' experiences of their first year of facilitating learning after completing a professional development programme focused on the construction of phronesis. An evaluation of a teacher professional development programme that is focused on the construction and use of

phronesis. An investigative study on the development of learners whose learning was facilitated by facilitators of learning. A quasi-experimental study on the development of learners who learning was facilitated by facilitators of learning. Research on the three student teacher participants' experiences of facilitating learning after five years of completing the professional development programme.

8.6. Conclusion

It is hoped that the findings to this study will make a valuable contribution to the already existing body of knowledge about the professional development of student teachers more particularly with one focused on the construction and use of phronesis. In this study the voices of the student teachers were presented to extend the understanding about the process of learning and developing within a professional development programme. Through this venture into the exploration of how student teachers used and constructed phronesis, to enhance their professional development, I have discovered that personal and professional development is an important process and outcome principle.

The radical, innovative student teacher professional development programme at the University of Pretoria heralded in changes to the role of teacher educators, student teachers, mentor teachers and the curriculum in developing student teachers for effective teaching and learning in South African schools. Improvements in schooling can be effected if student teachers are developed as committed, flexible, innovative, independent, resilient professionals. Developing the student teachers professionally

entails changing the pedagogic content knowledge to one that is focuses on student teachers constructing and using phronesis, to develop the capacity to act in the most effective and appropriate way in every particular situation, rather than possessing a body of "spatially temporally detached universal knowledge" (Slabbert, 2003, p. 7).

The development of student teachers focuses on their personal and professional development from the onset into a programme and continuously throughout the programme. This development had an evolving nature, in that the basline phronesis was an extended, comprehensive one at the end of the programme. Initially in the programme they were concerned with developing learners' attitudes to learning Life Sciences and as their development evolved they were concerned with developing learners as active learners who take responsibility for learning, meta-learning faculties and their co-operative learning abilities. The changes that the student teachers experienced were focused on teacher educator roles, student teacher personality types; their roles of facilitating learning and their immersion in real contexts in schools over extended periods of time in a reflective and supportive atmosphere. Changes that are sprung focus not just in curricula but also changes in the teacher educator roles, personality types; student teacher roles and the immersion in real contexts in schools. The research literature raises issues in the gap between the theory and practice of teacher education. This gap, in this study, was definitely bridged by the students themselves and the experiences they had to the outcome of their realization of their potential as Facilitators of Learning.

The three PGCE student teacher research participants were immersed in authentic environments. They experienced many first-hand (authentic) facilitating learning experiences, over extensive periods of time. During their professional development programme they were faced with a number of challenges to their beliefs, perceptions and emotions with regard to constructing their phronesis. An example of such a challenge was exploring who they were as people and their understanding of their role as facilitators of learning. Even though the student teachers were aware of the constraints that teachers currently experience when teaching they were proactive in deciding on the actions they could take to improve teaching and learning. They observed the teaching contexts as challenges to their development as facilitators of learning. Furthermore, the frustrations and jubilations that they experienced during their professional development were crucial for their learning process of becoming a Facilitator of Learning.

An important factor that has been revealed is that the personal learning and development of students is crucial for their professional learning in a teacher education programme. The student teachers' personal development forms the backbone of learning, as a professional. In fact it contributes to the professional development of student teachers. The construction of phronesis, therefore, was influenced by the personal development of student teachers and the contributions of the mentor teacher and the specialisation sessions.

Chapter 8 brings together the findings from cycles four, five, six and seven. These findings are synthesised and the thesis for the study is presented. The thesis puts

forward a number of issues which characterises the student teachers' construction and

use of phronesis within a professional development programme.